CHILDREN FROM SEED TO SAPLINGS

MARTHA MAY REYNOLDS

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CHILDREN FROM SEED TO SAPLINGS

by MARTHA MAY REYNOLDS

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PREFACE

THIS book is addressed to grownups who want to know more about children and to doctors, teachers, social workers, nurses, and college students. It is based on the premise that the best way to find out about children is to study real, live children and that, to do this, one has to know what to look for and how to interpret what one finds. Ten years' experience in teaching teachers, college students, and other grownups how to study children has made the author keenly aware of the need for a book that would cover the whole span of childhood from birth to adolescence, with special attention to the scientific observation of and evaluation of data about children. This the present volume attempts to do.

It would take a chapter in itself to mention by name all those who have been helpful in the preparation of this book: the teachers who taught the author to study children, the students who tested theories and procedures, and last, but not least, the children—the guinea pigs of child study. Scattered throughout the book are the sayings and wisdom of all three. Without these, this book could never have come into being.

To the author's colleagues in the Child Study Department at Vassar College special gratitude is due. With them she has studied children, challenging every hypothesis and evaluating every method, with the children's welfare always in mind.

To friends who have given generously of their time and professional advice in the preparation of the manuscript the author's obligation is boundless. Professor Winifred E. Bain of Teacher's College; Professor Helen Langner, M.D., of Vassar College; Mrs. Elizabeth Gilkeson, principal of the Poughkeepsie Elementary Day School; and Professors Edna Bailey and Anita Laton Conrad of the University of California have read and reread parts of the manuscript, offering criticisms and suggestions of inestimable value. Dr. Raymond Squier, gynecologist and obstetrician of the Cornell Medical school; Miss Marie Schaefer, kindergarten director of the Bronxville Public School; Miss Grace Allen, kindergarten primary supervisor of Buffalo State Teachers College; Miss Julia Parker of the Bryn Mawr School, Baltimore; and Mr. Howard Funk, principal of the Bronxville Junior High School have all contributed helpful comments on certain chapters.

The author's indebtedness to her husband, O. K. Sherwin, is very great. He has followed the development of the book every step of the way with keen interest and enthusiasm.

MARTHA MAY REYNOLDS.

NEW YORK CITY,
March, 1939.

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CHILDREN FROM SEED TO SAPLINGS

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1 . . . From Seed to Saplings

THE PREVIEW

THE best way to find out about children is to study real live children, but one must know what to look for and how to interpret what one sees. Children are complicated little organisms, and studying them is a much more complex process than it appears to the uninitiated. There is more to Johnnie than the curly hair and blue eyes that strangers notice at first glance, more than the wonderful smile that his mother adores, more than the temper that his teacher sees. These are only a few superficial indications of the real Johnnie. If it fell to your lot to take charge of him for an hour, a day, or a month, you'd be wise to know a great deal more about him. In fact, in order to be successful at the job of managing Johnnie, it would be well to understand this bit of humanity as well as possible. After all, he is the material with which you must work, and you can handle anything better if you are familiar with its properties.

Surprisingly enough, few grownups really appreciate the importance of trying to understand children, and fewer still know how to go about studying them. Most people who are responsible for children could do a very good job if it weren't for the children. They have decided ideas about what they want to accomplish; they know exactly how these should be carried out; but somehow the children get in their way. Many a nurse has failed to teach manners to Johnnie because she knew only manners and did not know Johnnie. Teachers who know Latin and mathematics are seldom successful unless they know Johnnie too. It's a little as if a radio operator understood the message he was to send and knew how to send it but was blissfully ignorant of the conditions under which it was to be received. Johnnie *is* the receiving end of our attempts to manage, handle, or teach—whatever you want to call it. The point is that without a knowledge of Johnnie our messages don't get across—at least not in the form that we intend.

This is the aim of the present book—to guide adults to an understanding of children, which is a science in itself. What does it mean to study children? It means more than just watching them. It includes making notes, consulting records, conferring with teachers and parents, reading what authorities have found out, and from all these sources piecing together the picture for yourself. No book or even collection of books presents the facts about children in the same way that the facts about geography, arithmetic, and languages are given. Children themselves offer the most profitable source of information. This volume is addressed to all who want to know more about children, to parents, camp counselors, classroom teachers, nurses and teachers in training and on the job, as well as college students. The term "child study student" covers them all.

CHILD STUDY

The term "child study" means just what it says—the study of children. It is broader than child psychology, child hygiene, or education; it includes these and many more. Child study centers attention on the whole child as he is—an integrated human being. It regards him not as a bundle of thoughts, feelings, and actions loosely tied together and easily separated but as an intricate organism with something of all three in his every waking moment. Studying children doesn't mean classifying and pigeonholing them; it means looking at them scientifically and accumulating enough facts to help us understand why they are as they are and what should be done about it.

AIM OF THE PRESENT VOLUME

This book has grown out of ten years of experience in guiding students in their study of children. In writing it, the author is trying to pass on to others the philosophy, plans, and procedures that have evolved during the trial and error period. To this end, the book is written in an informal style, in an attempt to capture the intimate, teacher-student relation fostered in the child study classes at Vassar College. It is not a textbook or a manual or yet a reference book. It is a combination of all three, just as real teaching should be. It says to the student: "Let us look at children together and then turn to the authorities to determine the significance of what we see. Let us figure out what the adult's responsibility is with respect to this behavior, and then let us honestly find out how each one of us feels about it and why." These four suggestions correspond to steps in the learning process as the writer has developed them: observation, scientific evaluation, practical application, and personal adjustment. These are the values that child study should bring to students—not just facts about children, not just ways of guiding children, but a knowledge of how to understand oneself and one's fellow beings through understanding children.

The book cannot yet be written that will tell us exactly what to expect of children at different ages and under different conditions, but much has been written that is very helpful. Students must be guided to a proper balance of reading and observation, for only by combining what others have discovered about children in general with what one can find out about the particular children at hand can one really understand the characteristics of any age group or of an individual child. To deal intelligently with any child, one must know what to expect at his age and what to expect of him as an individual.

Age is an important factor in growth. Each child is as he is, first, because he is of a certain age and, second, because he is an individual. Some people feel that since "each child is different" there are no general principles of growth or guidance to be mastered—that to understand any child one must start "from scratch," as it were. Fortunately this is not so. Even three very different seven-year-olds have some characteristics in common, some things they do (or can't do) just because they are that age. So you must know what to expect of seven-year-olds in general.

And each of these three seven-year-olds is an individual personality whom you must understand as well as you can. The books will tell you what children that age usually do, but only careful study of the child himself will show to what extent he fits into this picture. Furthermore, the development of children is often uneven. No seven-year-old is a seven-year-old in all respects. He may be equal to a five- or six-year-old in physical growth, to an eight- or nine-year-old in intelligence, and in other ways react as a seven-year-old. So to understand either seven-year-olds in general or a particular seven-year-old, one must know almost as well fives and sixes and eights and nines, the ages on either side of seven. Each age is a transition age between the one the child has grown out of and the one he is soon to grow into. The whole span of growth is important, and each age makes its contribution to an understanding of children of any age.

It is for this reason that the writer has put between the covers of one book all ages from seed to saplings and all phases of development. The practical advantages to the student are many. A picture of continuous growth is presented in compact form with all age levels receiving equal emphasis. Few, if any, books have done this before. Most of the already existing books either deal with one phase, like child health, child psychology, or education, at all age levels, or treat all phases of development for one age level, say the preschool child or the adolescent. From these sources it is difficult for students to get a complete and well-balanced picture of the whole span of child growth. Infancy, the preschool age, and adolescence ordinarily receive a disproportionate share of time and attention because so many reference books are available. Students skip lightly over the ages from five to twelve because references are scarce at these levels.

AGE GROUPS

For the sake of compactness, certain ages have been grouped together. It will be noticed that these groupings follow the usual school divisions of nursery school, elementary school, and junior and senior high schools. Before deciding on this conventional classification, the writer sought diligently for psychological dividing lines between certain ages. The existing literature on child development and the expert opinion of teachers who appreciate the shades of difference between adjoining ages revealed so much uncertainty and so many theories that the author was forced to the conclusion that if psychological dividing lines do exist, they are not yet sufficiently clear to be generally accepted. For instance, there is little evidence to indicate whether eight-year-olds are more like sevens or nines; or twelve-year-olds, more like elevens or thirteens. Apparently nobody *knows*, but everyone has an opinion of his own. So failing to find any more universally accepted basis for grouping certain ages together, the writer adopted the classification that would be most helpful to students—that used by the schools.

Each age-level group is designated by all the ages included in it—"two-, three-, and four-year-olds," for instance, instead of "two- to five-year-olds." This is to make it clear from the chapter headings where any age will be found. Many of the books about children cause serious confusion to students by using the same age in the titles of two different chapters. One heading will be Two- to Five-year-olds, and the next Five- to Seven-year-olds. In which chapter is the material about the fives? Probably in the latter, but that is not always the case. In this volume, each chapter has been definitely titled with only the ages discussed therein.

REFERENCES

The supplementary reading for this book has been confined to twenty books which in themselves constitute a well-rounded reference library.[1] The moderate cost of these few books should make it possible for most libraries, many groups of students, and a few individuals to secure the full number. Where this is not possible, a nucleus can be selected from List I, and the remaining books added as funds are available. It is suggested that all the books on List I should be assembled first, and then those on List II added until all twenty are on hand.

The reason for limiting the supplementary reading to these few books is to assure the reader a wider range of subject matter and treatment than he might discover for himself. No matter how extensive a bibliography is given, a student can read only from the books that are available to him. Where the reader is referred to books that are not on hand, he limits himself quite naturally to the books that he *can* find. And unless they have been selected with knowledge and thought for his purpose, they may duplicate rather than supplement each other. They may be long on the preschool age and short on adolescence or include a scarcity of educational methods and an abundance of mental hygiene. Ten books carefully selected may, in reality, be less limiting than fifty haphazardly chosen ones.

The literature in the child development field has grown amazingly in the last few years till now it has reached such proportions that only a few privileged libraries or individuals can have a complete collection. None but the most earnest students can be familiar with all that has been and is being written on the subject of children. Some selection of pertinent material must be made from the bewildering maze of books, pamphlets, magazine articles, and reports. In the preparation of this book, practically all of the 700 or more sources of information in the author's personal library were consulted at one time or another, but only 20 of these were selected as references for the reader of *From Seed to Saplings.*

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[1] See Appendix I, p. 287.

ASSIGNMENTS

Some students may be disappointed not to find a list of assignments given at the end of each chapter. The reason for failing to follow this usual custom is that experience has convinced the author that these carefully prepared lists are used far too sparingly. In this book, the suggestions for further study are given in the body of the chapters. This is done in the hope that their appearance at the psychological moment will arouse interest in a way seldom achieved when they are given in separate lists apart from the reading matter.

You will find frequent suggestions to "observe"—a rather vague term with several meanings suited to different purposes. If you are a serious child study student, it means that you should take notes or make some sort of written record of what you see and hear.[1] If you can't free yourself from the situation enough to do this, or if you are taking your study more lightly, it means to make mental notes of what you notice. The important thing is to hold your observation to the things that are significant and refuse to be distracted by other, temporarily unimportant things. There is so much to see and think about that some selection must be made if the study is to be valuable to you and eventually to the children.

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[1] See Appendix II, Techniques for Studying Children.

Knowing full well the difficulties that confront students in finding observation facilities, the author shows how to make use of every contact with children in order to find out what one wants to know about them. She assumes that few if any readers will have at their disposal controlled situations in which to observe children of all ages. Those who do have children in their homes or who have access to a modern school and the time to use it are undoubtedly in the minority, so plans and methods are given for studying children wherever they can be found. Fortunately both the smallest hamlets and the largest cities furnish material for study, if one becomes child-conscious and makes use of every contact with a child of any age. It is not necessary to make a formal visit to a school or a home or to assemble an academic-looking notebook or to write pages of summaries and reports. The children are all around us; we have but to keep our eyes open, and the streets will suddenly seem full of them.

HOW TO USE THIS BOOK

This book is intended as a guide to the study of children, to tell you what to look for and how to observe it. It does not always explain the significance of what you see, and it seldom tells you what to do about it. These are things that you will work out for yourself as you read the supplementary references, study the children, and talk with teachers and parents about them.

The significance of behavior is a controversial subject. Even the smallest act is capable of several different interpretations, each of which is in the realm of hypothesis. Some interpretation is inevitable, but it was the writer's aim in this volume to subordinate it to the technique for collecting data about children. It is not that interpretation is unimportant, but rather that it is the next step and one that the writer encourages each reader to take by himself on the basis of all his findings.

Some readers will be disappointed that this book does not tell adults what to do and when to do it in managing children. That is the third step. First, study the children; second, interpret the data; and then decide what to do. There is no rule of thumb to follow. Each child requires different treatment. It would take fifty volumes instead of one to offer helpful suggestions for the guidance of children of all ages and under all conditions. But the topic is not omitted entirely. It is implicit in the very study of children, which is the only sound foundation for successful child guidance.

It is obvious that this book is not meant to be taken in one large dose, like a detective story. Better to read it slowly, chapter by chapter, stopping along the way to observe children of appropriate ages. Work back from the age in which you are interested and then forward to cover the whole span of childhood, or follow the chronological sequence. It makes little difference. The thing that is important is to supplement your reading with observations of real live children. In this way, people who are in daily contact with children, teachers, nurses, social workers will be stimulated to find out more about the individuals and the groups in their care, and through their study they may see certain behavior in a different light. Teachers and students of child development who are devoting a semester or so to their child study work will find some helpful suggestions given in Appendix II, Techniques for Studying Children; Appendix III, Observation Arrangements for Student Classes; Appendix IV, Techniques for Interviewing; Appendix V, Suggested Outline for Child Study Course.

This book, then, has been written for all students of children. The task of adapting its use to your situation is yours. You will need to modify some suggestions, reject others, and add new ones. And as you do so, never for one moment lose sight of the children. The real aim of *From Seed to Saplings* is to help grownups catch the spirit and taste the joy of understanding children, so that they will be led on to study human behavior further and to work out a philosophy that will be helpful to them in all their relationships.

REFERENCES

LIST I

BAILEY, EDNA W., ANITA D. LATON, and ELIZABETH L. BISHOP: *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933.
Chapter I. Why Study Children? pp. 1–3.

MORGAN, JOHN J. B.: *Child Psychology*, Farrar & Rinehart, Inc., rev. ed. 1934.
Chapter I. Methods and Objectives of Child Study. pp. 3-32.

STRANG, RUTH: *An Introduction to Child Study*, The Macmillan Company, rev. ed. 1938.
Chapter I. Introduction. pp. 1–7.

LIST II

GOODENOUGH, FLORENCE L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.
Chapter I. Psychology: The Study of Human Development. pp. 3–15.
Chapter II. Problems and Methods of Modern Psychology. pp. 16–26.

ZACHRY, CAROLINE B.: *Personality Adjustments of School Children*, Charles Scribner's Sons, 1929.
Introductory: The Necessity for a Complete Study of the Child. pp. 1–7.

2 . . . Before Birth

THE SEED AND ITS FIRST NINE MONTHS

IT IS with the newborn baby that students have to begin their observations of children, but birth is certainly not the real beginning of an individual. The life cycle for each person begins well before that, and hereditary and environmental influences have had a nine months' start before the baby first comes to our view. In this chapter, we shall briefly review what biology has to say about the intricate processes by which children receive their heredity from their parents and the ways in which environmental influences affect this material during prenatal life.

Throughout this discussion, in fact throughout the entire book, remember that heredity and environment are so interrelated that it is practically impossible to separate them. By "heredity" we mean the influence of the materials received by an individual from his parents at the beginning of his life;[1] and by "environment," the conditions to which he is subjected—the way he is treated. It is hardly profitable to speculate on which is more important. Jennings suggests

[1] Jennings, H. S., *Genetics*, p. 4, W. W. Norton & Company, Inc., 1935.

a parallel with the manufacture of automobiles and asks which is more important, the material from which the cars are made or the method of manufacture.[1] The answer is that both are vital. One as much as the other determines whether the ultimate product will be a Ford or a Rolls-Royce. High-grade material molded and shaped by Ford mass production would not emerge at the end of the assembly line a Rolls, as we know it. Nor would material of lesser grade make a Rolls even if assembled with the loving care traditionally ascribed to workmen in the Rolls plant. The principle applies to the development of a human being, in a sense, as it does to the manufacture of cars. Heredity supplies the original material; environment has the function of the workman. Good heredity can be spoiled by poor environment, and poor heredity can be revalued by a favorable environment. The ultimate human product is not the inevitable realization of all the possibilities handed on to him by heredity. He is the result of his heredity *as influenced by his environment.*

What is his heredity, and how does he get it from his parents? These are questions that interest students of child study, because the mechanisms of heredity indicate the starting point even though they do not determine the eventual development of the child.

For anything so far-reaching in its effect on the life of an individual, heredity originally comes in amazingly small packages. Contained in a tiny cell barely visible to the naked eye are the chromosomes and genes, the real bearers of heredity. In spite of their minuteness, they are tremendously important and will be discussed in considerable detail later in this chapter.

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[1] *Ibid.*

How does an individual receive his heredity from his parents? A cell from the father unites with a cell from the mother to form the fertilized ovum, each parent contributing in this way a share of the material that he himself received from his ancestors. These father and mother cells came from the bodies of the parents, but the hereditary material that they carried represented a long line of ancestors, not just the parents themselves. To understand the processes by which this hereditary material passes from one generation to another and develops into the children we know, it is necessary to learn something of cells in general and of the germ cells before fertilization in particular. There is space here to give only a brief summary of the more important points in this technical subject, so students will find further reference reading essential.

CELLS

The human body is made up of cells of different sizes, shapes, and functions, most of these cells composed of living matter containing within their nuclei a substance called "chromatin." Figure 1 shows the typical features of a cell, greatly simplified for illustration.

At certain periods in the life of the cell, this chromatin arranges itself in stringlike forms which we know as "chromosomes." It is customary to say that in the human species each cell has forty-eight chromosomes, but it would be more strictly correct to say that it has twenty-four pairs, because there are twenty-four different sizes and shapes and two of each kind. Apparently one chromosome of each pair represents the material that came from the father's lines of ancestry, and the other that which came from the mother's.

It is probable, though, that a chromosome is not the smallest unit. Each chromosome is now thought to be made up of "genes," minute particles which are arranged in a linear series in each chromosome. These genes are so tiny that no one has seen them, but there is considerable experimental evidence of their existence.

Cells are living things and carry on all the activities fundamental to life. It is important that students should have the experience of studying living cells of plant and animal life under a microscope to supplement their study of diagrams and drawings of cells that are found in books. Cells as pictured on the printed page are so black and white, so regular in form, and so inert that the characteristics of living cells do not seem to have any connection with them.

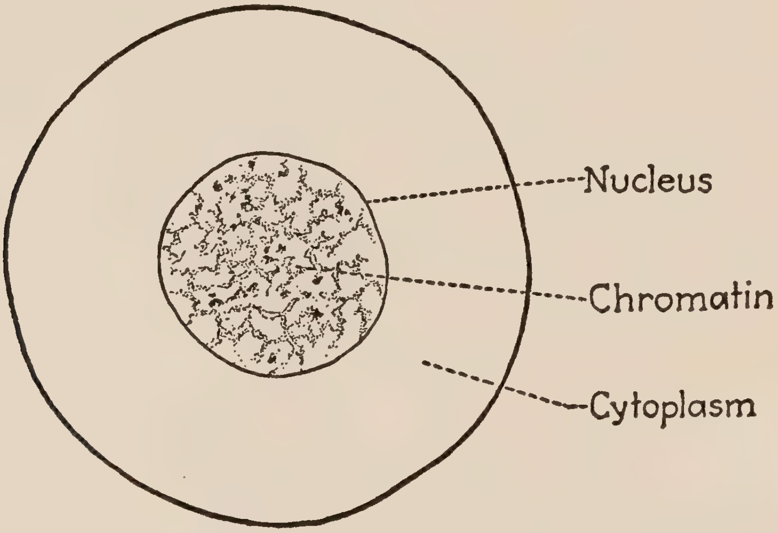

FIG. 1.—Diagram of a cell greatly simplified for illustration.

Cell Division

One particularly interesting experience is to see a cell divide and form two new cells. If only it were possible to stain the chromatin, so that the action of the chromosomes could be observed, a clearer understanding of the whole

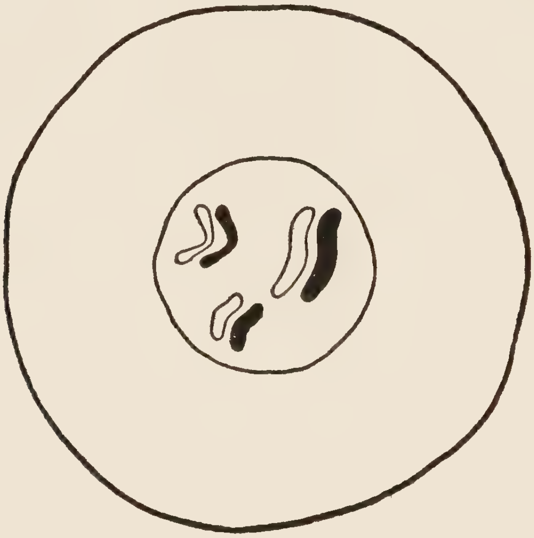

Fig. 2.—Cell before division. The six chromosomes arranged as three pairs.

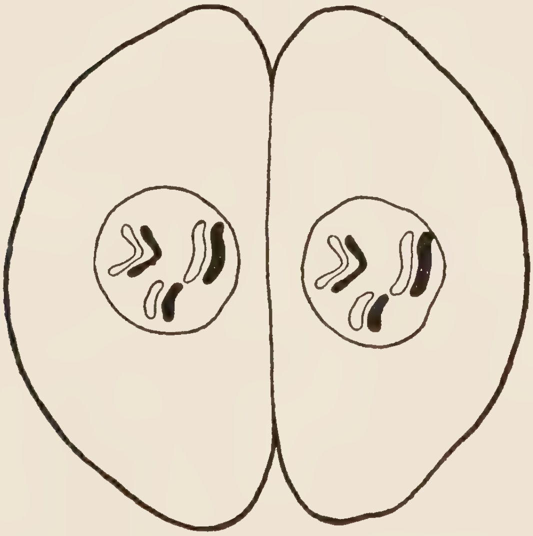

Fig. 3.—After division. The chromosomes of both new cells are similar and match those of the original cell.

process could be obtained. Unfortunately, laboratory techniques have not reached the stage where this is common practice, and students will have to get their knowledge of cell division through words which is difficult at best.

The chief point of interest to child study students about ordinary cell division ("mitosis" is the technical name) is that each of the forty-eight chromosomes splits lengthwise and presumably divides into two identical chromosomes, of the same shape, same size, and same arrangement of genes. One half of each split chromosome goes into one of the new cells, the other half into the other new cell, so that both new cells have the same amount and kind of chromosome material. Chromosome for chromosome, gene for gene the cells are the same. Figures 2 and 3 given above illustrate this. For purposes of clarity, only six chromosomes (three pairs) are represented, and other features of the cell have been simplified correspondingly.

Most of the cells of the body divide in this way—the nerve cells, bone cells, and skin cells, as well as the cells produced by the organs of reproduction. In the case of the last, the genes and the chromosomes play a very special part in determining the heredity of an individual.

GERM CELLS

Germ cells are of two kinds: the spermatozoa produced by the testes in man, and the ova produced by the ovaries in women. Fertilization is the union of a single sperm with a single ovum and is the true beginning of the life cycle. The chromosomes and genes in these cells are the real hereditary carriers. They determine the *possible* development of the new individual, but they do not determine what he ultimately becomes. Environment plays its part in that, as we have already seen.

Source of Information about Chromosomes

Our information about chromosomes and genes and their influence on development comes from experiments of the biologists with insects, plants, and animals. Observation of cells under high-powered microscopes, artificial interference with chromosomes themselves, and experimental breeding have produced a vast field of knowledge about the way these minute substances react. Incredible as it may seem to the lay person, biologists have mapped a good many of the genes, locating on the tiny chromosome the very spot (or gene) responsible for a particular effect on the individual. This fascinating subject must not lead us astray here from the focus of our interest, the child, and his real beginning as a new individual. Let us turn our attention now to the details of the action of the chromosomes at this beginning.

As we have pointed out, ordinarily each cell has forty-eight chromosomes, but the mature ova and spermatozoa are exceptions to this in that each has only twenty-four chromosomes. The process by which the number of chromosomes is reduced by one-half (from forty-eight to twenty-four) is called "reduction division," and its importance in heredity is far-reaching.

Reduction Division

In reduction division, the chromosomes divide in such a way that the new cells are different from the original cell and different from each other.

Briefly, the details of this division are these. The forty-eight chromosomes arrange themselves as twenty-four pairs. Keep in mind that one of each pair represents the father's contribution and one the mother's and that here we are referring to the father and mother of the person whose germ

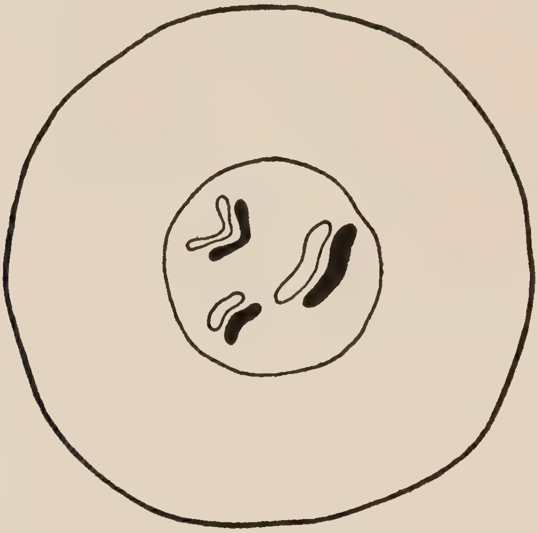

Fig. 4.—Cell before division. The six chromosomes arranged as three pairs.

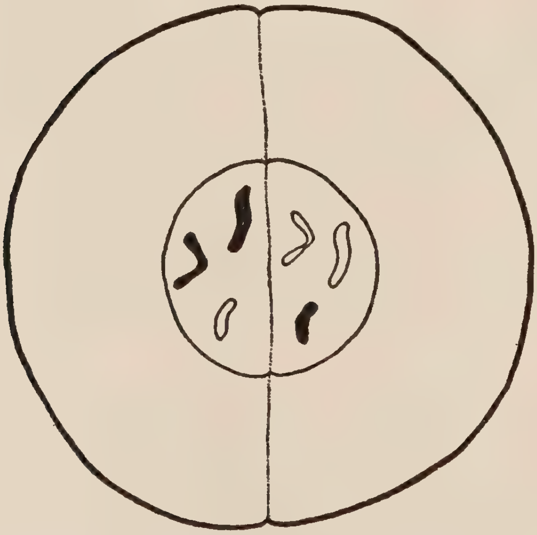

Fig. 5.—In the process of dividing. One of each pair goes into each new cell.

cells are being discussed—the grandfather and grandmother of the child to be. In Figs. 4, 5, and 6, the paternal chromosomes are indicated in black; the maternal, in white. Notice, also, that one of each pair is black and one white; there are no pairs with two black or two white. Figure 4 shows the six-paired chromosomes before cell division; Fig. 5, an intermediate stage (hypothetical for purposes of clarity), when the pairs are separating from each other. In Fig. 6, we see the two new cells, each of which has only three chromosomes.

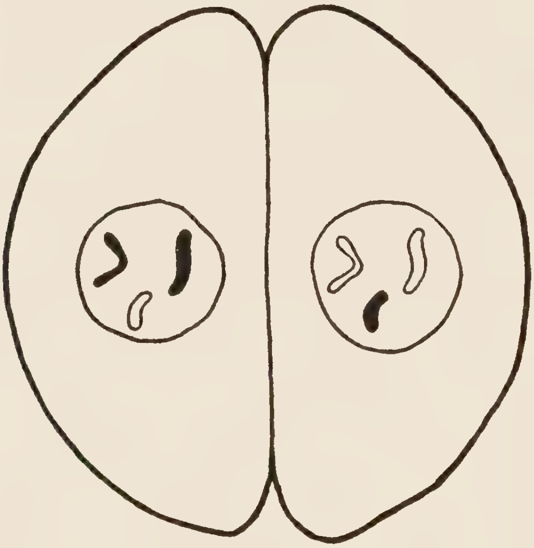

Fig. 6.—After division. The chromosomes of the new cells are not similar and do not match those of the original cell.

In reduction division, each chromosome separates from its mate (the pairs divide), and one of each pair goes into one cell, and its mate into the other cell.

Very little is known about the way these pairs divide themselves. Sometimes the paternal chromosome of a pair goes into one cell, sometimes into another. One of the new cells may have fifteen of its twenty-four chromosomes from the paternal line of ancestry and nine from the maternal, or five and twenty or any one of many, many possible combinations. That is what makes each new cell different from the others. Though all have twenty-four chromosomes of the same size and shape, their internal make-up, as it were, is unique.

The Effect of the Genes

On each chromosome, it will be remembered, genes are arranged in definite patterns, and each gene is thought to carry the determiners for one or more traits in the offspring. A particular gene may affect some particular part of the body, produce effects on several parts, or be one of many genes that taken together affect a single characteristic. If one gene affected one and only one characteristic, things would be comparatively simple, but all these various possibilities complicate the situation immensely. For example, it takes fifty different genes to produce the normal red eye color of the Drosophila (fruit fly). Changing any one of them changes the color of the eye.[1] And this is presumably the situation with every characteristic.

When the chromosomes separate in reduction division, they keep their original pattern of genes, for the most part, but this is not always so. An exception called "crossing over" occurs when, in the beginning of the reduction division, some paired chromosomes exchange parts. The parts exchanged are, of course, the smaller subdivisions of the chromosomes, the genes. This means that a gene from the maternal chromosome may change places with a corresponding gene from the paternal chromosome, so that the resulting chromosome may no longer be wholly paternal or maternal but a combination of both.

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[1] Jennings, H. S., The Biological Basis of Human Nature, p. 194, W. W. Norton & Company, Inc., 1930.

About all that we are sure of today about the human "seed" before fertilization is that it is a germ cell with twenty-four chromosomes and an unknown number of genes whose possibilities for infinite permutations and combinations may affect the characteristics of the developing human being in untold ways. And after fertilization, when the sperm has entered the ovum and the chromatic material of the two has fused, we know that the cell thus formed has forty-eight chromosomes, but we cannot even guess how the genes in these chromosomes will influence the development of the new individual.

Hereditary Material—Summary

Each human being during his or her lifetime produces many more germ cells than are ever used to form new individuals. Some of these cells have more chromosomes from the father than from the mother, some the other way round; and each cell has almost an individual pattern of genes. "In fertilization, sperms and ova having the various diverse combinations of chromosomes unite at random."[1] Mathematically with twenty-four pairs of chromosomes, the number of different types of germ cells that may be produced runs well over a million. With the added factor of "crossing over" of the genes, the number of different types possible is greatly increased beyond this figure.[2]

When more than a million combinations are possible, it is surprising that there are as many likenesses as there are between children of the same parents, but it isn't a bit surprising that it is impossible to predict with any degree of certainty what the offspring of any couple will be like.

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[1] JENNINGS, H. S. *Genetics*, p. 53 W. W. Norton & Company, Inc., 1935.

[2] *Ibid.*, pp. 52, 53.

A new combination of genes, the result of the father's plus the mother's contribution, may provide the material for characteristics that were not present in either parent or in any other children in the family. Right from the very beginning, the child then is an unknown quantity with possibilities about which we can only speculate. He receives his hereditary material assorted by chance from literally hundreds of ancestors, and his hereditary unknowns are further complicated by the environmental unknowns which begin to operate even when he is in the one-celled stage. Faced with the myriads of secrets that nature still keeps to herself, man can but feel humble, for it is apparent that at this stage of knowledge the unknowns are greater than the knowns.

PRENATAL DEVELOPMENT

Let us now follow through the development of the new individual from the time of the union of the sperm and the ovum. Imagine the fertilized ovum, a tiny cell less than a millimeter in diameter, and then think of the newborn baby, a live organism, turning its head, sneezing, and making many other coordinated movements. Amazing growth has taken place in the nine months of prenatal life, not only in size but in organization. A baby is not just a mass of billions of cells; he is a working unit, with parts differentiated as to structure and function, connected by an intricate system of communication.

Sources of Our Knowledge

Where the first nine months of growth takes place in the body of the mother, it is not easy to find out what changes are occurring during that time. Direct observation of the living organism is out of the question, because the embryos are hidden from view and well protected by membranes and fluids. From careful prenatal examinations, doctors can tell many things about an unborn baby—for instance, whether there are twins, in what position the baby lies, and the location of the heart, among other things. But there are many things that they cannot tell—the exact age of the fetus, for example, or the stage of development of the teeth or of the nervous system. These things have been extensively studied with animals, however, until we have today a vast body of knowledge about embryology. Another source of information is found in the relatively small number of human fetuses that are made available to the physicians by miscarriages, abortions, and premature births. Unfortunately, these are seldom representative, "normal" specimens, because there is almost always something defective about an organism that nature does not let the mother carry to full term.[1] But this is the only way that human specimens can be obtained. Popular opinion does not permit the interruption of the usual course of a normal pregnancy to study the growth of the human embryo, as it does with animals. Hence much of the knowledge of the prenatal growth of babies comes from a study of these abnormal specimens. Every hospital that takes maternity cases has a collection of fetuses at various stages of development, and arrangements can be made to study some of these. Interesting as the abnormal ones may seem to you, do not spend time on them to the exclusion of those which the doctors tell you are more representative of the usual development during prenatal life. The thing about these fetuses, whether normal or abnormal, that will amaze you is the very early age at which many of the structures are laid down. Even in the third month, the fetus definitely resembles a human being, its nails begin forming, and its sex can be readily distinguished.[1] And the teeth are present in rudimentary form in a ten weeks' fetus.[2] The fact that most structures are established at least six months before birth emphasizes the importance of nutrition in the early stages of pregnancy and dispels any ideas that things that happen to the mother in the last months of the pregnancy will result in malformations of the child. The prenatal period of the life cycle of the human body is divided into three periods: the first two weeks, called the "period of the ovum," the "period of the embryo" which carries on from there and terminates in the third lunar month, and the "period of the fetus," the remainder of pregnancy.

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[1] Squier, Raymond, The Medical Basis of Intelligent Sexual Practice, p. 122, *in Plan for Marriage*, Joseph K. Folsom, ed., Harper & Brothers, 1938.

We cannot discuss here all the interesting facts that science has discovered about the prenatal growth of the human being, so only a few significant points will be touched upon briefly in the hope of arousing students to study the subject further in the suggested references.

Environment and Early Growth

Let us turn back to the fertilized ovum and follow its growth through the first two weeks which is called the period of the ovum. During this time, the single cell has divided

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Arey, Leslie Brainerd, *Developmental Anatomy*, p. 134, W. B. Saunders Company, Philadelphia, rev. ed., 1935.

[2] *Ibid.*, p. 173.

into many different cells and has made the journey from the place in the Fallopian tube where fertilization occurred to the place in the uterus that is to be its home for the remainder of pregnancy. Changes have taken place which illustrate the influence of environment even at this early age. Environment is relatively simple in the beginning. For chromosomes and genes it is the cytoplasm in the cell itself (see Fig. 1), and for any single cell the environment is composed of the cells that lie around it.

Chromosomes and cytoplasm (heredity and environment) do not remain so separate at all times as they are usually pictured. At every cell division, parts of the cytoplasm are taken in with the mass of hereditary material, are chemically and physically changed by it, and are given off again.[1] Even in the single-cell stage, there is interaction between the factors of heredity and environment. The processes by which all this takes place are intricate and need not concern us except as they illustrate one of the fundamental principles of development—that heredity may react on an environment to change that environment, just as environment may react on hereditary material to alter the course of its growth.

And while the fertilized ovum is divided first into two, then four, then eight, then sixteen cells, the environment for any single cell changes and influences the development of that cell. If when it is in the two-cell stage the developing egg of the sea urchin is divided into two separate cells, each cell will produce an entire individual instead of one half of the body which it normally would produce.[2] This illustration could be duplicated from experiments on other living things at different stages of development. There is ample evidence that what a cell becomes depends on its relation to other cells—in other words, its adjustment to its environment.

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[1] JENNINGS, H. S., *The Biological Basis of Human Nature*, p. 80, W. W. Norton & Company, Inc., 1930.

[2] *Ibid.*, p. 86.

Hormones

Recently other types of "internal environment," hormones, which influence the growth of cells, have received considerable attention. They are secretions from the thyroid, ovaries, testes, pituitary, and other internal glands and have vast effects on the organism throughout life. It is the sex hormones acting upon the genes that cause the bodies of the two sexes to develop differently, one producing the characteristics of the male sex; the other, those of the female. Body cells may produce either type of characteristics, depending on the hormone that acts upon them.[1] The thyroid hormone transforms the tadpole into the frog or the toad. A great deal is known about hormones, and examples of their effects could be endlessly repeated. The point of importance to us here is that hormones constitute a part of the environment that influences human growth and development even in the early stages of prenatal growth.

We have seen, then, that the functioning organism which we know as a baby is developed from the original fertilized ovum by a process of cell division in which each cell receives its full assortment of chromosomes, half from each parent. Although the hereditary material in each cell is the same, the cells become differentiated in structure and function, influenced by the cytoplasm within them and the cells that surround them.

[1] *Ibid.*, p. 112.

Embryo

While this development is taking place, the embryo is attached to the wall of the mother's uterus and receives its nourishment through the umbilical cord. The mother digests and prepares the food for the embryo and removes its waste products through her blood. Although the two circulations come into close contact, they do not mix, and the exchange is effected through the fingerlike processes of the connecting membrane. This is the only means of communication between mother and child. There are no nerves connecting the two, and consequently no possible way in which "maternal impressions," fears, and hopes can mark the baby or influence his personality.

The mother's responsibility for providing proper nourishment for the developing child is very great. The science of nutrition has made careful studies of food requirements during pregnancy, and the results are now available to practically all mothers-to-be. Calcium is especially important in the formation of the child's bones and teeth, and other minerals, vitamins and proteins play their parts in nourishing the developing embryo. The present and future health of both child and mother depend on a well-balanced diet for the mother. Small wonder, then, that nations are concerning themselves with the prenatal care of mothers.

At this point in your work, you would find it interesting to visit a prenatal clinic, to talk with the doctors and nurses, and to study the advice that they give to the mothers. Collect some of the pamphlets issued by the government bureaus, insurance companies, and clinics, and see if you can figure out the scientific reasons for the diet and procedures they suggest.

Principle of Growth

Study the fetuses again to learn what changes take place from month to month. Growth does not proceed from small to large in all parts of the body at the same time. The structures and organs grow at different rates. One grows rapidly for a time, then slows down while it fills out and the adjoining parts catch up with it. This process of alternate acceleration and slowing is commonly designated as "stretching" and "filling."[1] It is one of the fundamental principles of physical growth and applies to postnatal as well as to prenatal life. For example, the bones elongate for six months, then enlarge in diameter for the next six months. And while the thighbone increases in thickness, the leg bones are rapidly elongating, and vice versa.[2] This we learn from the studies of the scientists, but we can see for ourselves how the gross body proportions change. Compare the relation between the size of the head, length of the arms, legs, and body of fetuses, newborn babies, six-year-olds, and adults. How large the heads of the babies seem, how short their arms and legs. Think of the body of a growing child as made up of parts in different stages of development. They have not all made the same progress toward maturity at the same time. We shall have occasion to refer frequently to this principle that different organs grow at different rates, because it has an important bearing on the education of children at different ages.

More is known about the physical growth than about the behavior of the fetus. Mothers tell of "the baby's kicking"; and as early as the fourth month, the doctor can detect

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[1] Arey, *op. cit.*, p. 147.

[2] *Ibid.*, p. 147.

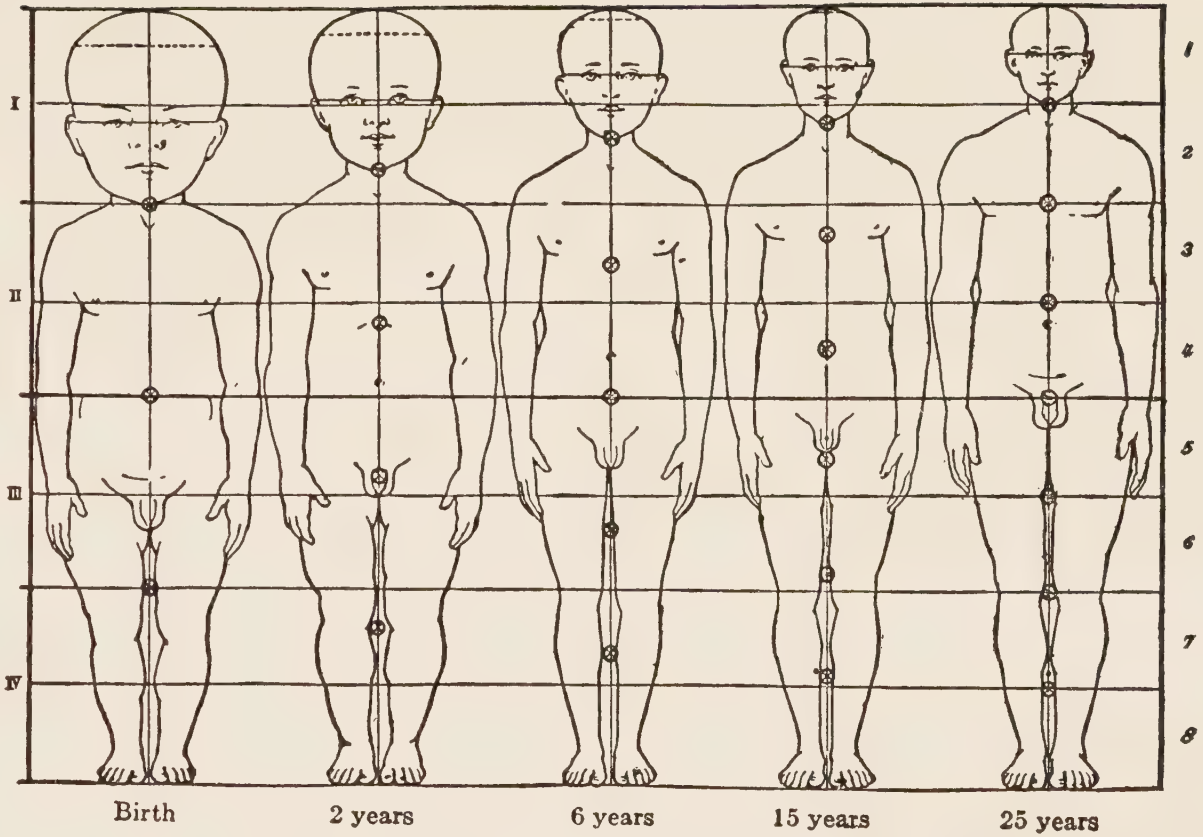

Fig. 7.—Growth; proportions at different age periods (Stratz). (*From Annie D. Inskeep, "Child Adjustment," D. Appleton-Century Company, Inc.*)

the fetal movements, but the baby is so well protected that we do not know just what those movements are. We do know, however, that by the time of birth, the human fetus has an extensive repertoire of responses which have been developing for several months.[1] Birth does not mark their beginning but rather their appearance where we can observe them.

The following summary emphasizes the important points of what takes place before birth. The life cycle of a human being begins with the fertilization of an ovum by a sperm. At that time, the hereditary material is laid down in the chromosomes, and environmental influences begin to operate soon after. The growth that takes place during the nine months of prenatal life lays the foundation for future growth and is itself the outcome of the interaction of heredity and environment. In no sense does birth mark the beginning. It is merely an incident, albeit an important one, in the life of a child.

HEREDITY AND ITS INFLUENCE ON CHILD DEVELOPMENT

Before we go on to the baby after birth, let us discuss what is known of the influence of heredity on development throughout life. Hereditary material, though contained in the original cell nine months before birth, exerts its influence on growth and development for many years after birth. In fact, many of the questions about heredity that interest us have to do with characteristics not present in the beginning, ones that show themselves only later in life after environment has been at work for years. It is essential therefore to interpret child development at all times in the light of both heredity and environment.

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[1] DEWEY, EVELYN, *Behavior Development in Infants*, p. 56, Columbia University Press, 1935.

Limitations of Our Knowledge of Human Heredity and Environment

From the discussions earlier in this chapter, it is clear that there is still a great deal that we do not know about human heredity. This is not surprising.

Experimental breeding of human beings is not possible as it is with guinea pigs and fruit flies, and even if it were, human beings take so long to grow up and they have so few children in each family that hundreds of years would be required before adequate data could accumulate. As it is, scientific interest in heredity is only about forty years old, barely time for two generations of human beings to grow to maturity. It is easy to see, then, why most of the laws of heredity have been worked out on insects, plants, and animals.

Furthermore, changing environmental influences hinder the search for facts about man's heredity. Scientists can control the environment of fruit flies, keep them in bottles, at even temperatures with the same kind of air and food supplies. Then, when the flies develop different characteristics in these identical environments, it can be safely said that these differences are due to heredity, to the materials that were handed on to them from their parents. Not so with man. No one today would countenance an experiment that kept children under a strictly controlled environment, even if we knew enough to provide such a condition, which we don't. A scientifically controlled environment means that conditions must be the same in every minute detail, or you must know how and to what extent they differ. The environment for human beings is much more complex than for plants or animals. Growing children are affected by more than temperature, air, and food. The smiles and frowns of adults as well as aesthetic experiences like fine art, good music, and an infinite number of other intangibles are important environmental influences which we have no way of measuring today. Even when conditions seem to be the same, closer study reveals fundamental differences.

The Dionne Quintuplets

To the lay person, the Dionne quintuplets are the outstanding example of children brought up in a controlled environment. Eminent specialists have watched over them since birth, have provided for them everything money can buy in the way of equipment and fine nursing care, and have protected them from the harmful influences of the outside world. But even so, the conditions are not really the same for each of the five children.[1] The same opportunities are offered to all, the same food, the same tables and chairs, the same nurses; but even a typical day will show differences in the way the children react to their environment. For instance, one may eat more than the others today. Another may exercise a great deal, a third sleep more. And in the field of social responses, one may be so naughty as to be isolated from the group, whereas the fifth may smile so sweetly that she receives only smiles and pats of approval from those in charge. In the last analysis, the environment is not the same for all five children, and there is no way of measuring the differences.

[1] BLATZ, W. E., and D. A. MILLICHAMP, The Mental Growth of the Dionne Quintuplets, in *Collected Studies on the Dionne Quintuplets*, p. 11, University of Toronto Press, 1937.

Moreover, the scientists obviously cannot experiment on these famous children in the way that they experiment on animals: four on an optimum diet, the fifth on a less adequate one, one with special play materials, four with a limited supply. No, all five children must have in every way the best environment that science knows how to provide for them, and even that best is not really a scientific environment, nor is it the same for all of them. Furthermore, an experiment such as that being carried on at Callander is expensive. Small wonder, then, that the biologists, for the most part, largely confine their activities to their laboratories. At the present stage of our knowledge, for the time, money, and energy expended, plants, insects, and animals are more productive of worth-while results in the field of heredity than man.

Studies in Human Heredity

Two kinds of studies of human heredity were quite popular twenty to thirty years ago but have been largely discredited today because they failed to take account of the possible influences of environment. One was the statistical kind of study, which dealt with the measurements of large numbers of parents and their offspring. When it was found that the resemblance between parents and children or between children of the same family was greater than between people who were not related, it was assumed that the trait was due largely to heredity. The trouble with this conclusion was that parents and their offspring usually live in the same environment, and the traits might conceivably have been influenced by climate, food, intellectual stimulation, or a thousand other things which are certainly not heredity but environment.

The other type of study might be called the "family tree" type where the ancestry of a particular family was traced as far back as possible. Some startling results came from this kind of study. The "fine families" showed a great number of leaders, statesmen, and talented men and women among their ancestors, whereas the so-called "degenerate families" numbered mostly "professional paupers," "thieves," "criminals," and other undesirables among theirs.

There are two criticisms of a study of this kind: one, that the information about people long dead is often inaccurate and incomplete; and the other, that it does not take account of the environment in which these people lived. To label an ancestor "a drunkard" may not be an accurate description of him. A man who took a drink occasionally might be considered a drunkard in a straigt-laced small town of the seventies and merely classed as a gentleman in New York City today. We need more detailed and accurate information about each person than it is usually possible to dig up about people who lived long ago.

The other objection to using family records is that even if you do find a certain trait running in a family, that is not proof that it is hereditary. It might be greatly influenced by environment. A certain family may produce more than its share of criminals; but since each child grew up in a criminal environment, who can say that criminality in that family is hereditary? Another family may have an unusual number of college presidents and scholars, but each of these grew up as children in highly cultured homes. Who knows what might have happened if the criminals and college presidents had changed homes as children? Traits that run in families may or may not be hereditary. We need more careful studies before we can say definitely.

You may find it interesting at this point to look up your own family record or that of a friend. Seek out the family Bible or the older members of the family who can tell you about the people no longer living. Keep track of the gaps in the record as well as of the well-known ancestors. Notice how the dramatic incidents about certain people are referred to over and over again, how some members of the family are simply mentioned by name and dates of birth and death, and other members are missing entirely. Not even the most complete family history tells everything we need to know about everybody. Unwittingly it selects the dramatic and praiseworthy, skips lightly over the commonplace, and wherever possible omits to mention the black sheep and their escapades. Interesting as it may be to the people most concerned, it is certainly not scientific material for a study of human heredity.

INTERACTION OF HEREDITY AND ENVIRONMENT

At every turn, we are forced to the conclusion that the influences of heredity and environment are so interrelated that it is impossible to separate them. Don't be misled by the popular questions "Do you believe in heredity?" or "What percentage of influence do you think environment has in the development of the individual?" Discussing things like this is a rather fruitless pastime. From the moment of fertilization, the interaction of heredity and environment begins and is continued throughout the lifetime of the individual. At any stage of his development, the human being is a product of both, not of one or the other. Who then can say which is the more powerful influence on the organism as a whole? The two are so intermingled that it is impossible to consider them separately, much less evaluate their relative contributions.

For some traits this question can be answered in part. We do know that certain things like eye or hair color can be altered only by unusual conditions, whereas others, like disposition and manner of speaking, are influenced by everyday contacts with other human beings. For some traits, heredity is the more powerful influence; for others, environment; but we are far from knowing which traits belong on which list and to what degree they can be changed from the potentialities laid down in the genes.

The Inheritance of Insanity

In the light of these facts, how do we answer the questions that popularly come to mind when the topic of heredity is under discussion? Space is not available here to consider all the possible questions, so one topic, the inheritance of insanity, has been selected to illustrate the application of our knowledge of human heredity.

Remember, first of all, that even if insanity does run in families, that is no proof that it is hereditary, in the sense of being handed down from one generation to another through the germ cells. Remember, too, that the opposite of insanity ("stable nervous constitution" we shall call it for want of a better term) is equally worthy of attention although not so easy to distinguish, perhaps. And, furthermore, note that insanity is not a single characteristic, not even a disease entity. The term covers many different kinds of conditions, some of which seem to be more easily influenced by environment than others.

Now suppose that "the mother is in an insane asylum. Will her children be insane?" That is the sort of question that people ask, and the answer is not a simple "yes" or "no." Think back to the chromosomes and the genes, the biological basis of both stable and unstable nervous constitutions. If there is a great deal of insanity in the mother's ancestry, then she has a greater chance of producing germ cells that, under certain conditions, will develop into offspring who are insane than if her ancestry had more stable members in it. If she herself is the only insane member of the family, then the chances are very much smaller.

So far, we have considered only the mother's side of the child's heredity, but fortunately the father's side is of equal importance. If there is insanity in his family also, this increases the chances of insanity in the offspring; but if his germ cells contain determiners for the opposite (stable nervous constitution, we assumed it to be), the chances of the offspring's becoming insane will be lessened. Human reproduction is bisexual, remember. The father contributes half of the germinal material, which is equally important although perhaps less dramatic than that of the insane mother.

All this is assuming that the type of insanity under discussion is one that is little influenced by environment. General paresis, which is due to the syphilitic germ, and alcoholic dementia, the result of too much drinking, could most certainly not be inherited as such. Other types seem to be little influenced by environment, although the mental hygiene school of thought takes the stand that most mental diseases could be greatly lessened by proper teaching and better living conditions. Before you can really decide whether an insane mother will produce insane children, you must know what kind of insanity she has. It would be useless to talk about the inheritance of insanity if the insanity under discussion were due to a germ that she had contracted during her lifetime.

And in the last analysis, even if the mother has an insanity that seems to be little influenced by environment, all that she can hand on to her children through the germ cells is the potentiality for certain characteristics that may develop under given conditions. She does not hand on insanity of any kind as such. At the worst, her children get a tendency for it which need not develop if only we are wise enough to overcome it by proper environmental conditions and training.

Cousin Marriages

Another popular misunderstanding about human heredity is that all cousin marriages result in feeble-minded offspring (or children defective in some other way). This is not the case.

The real objection to cousin marriages lies in the danger of concentration of chromosomes with similar characteristics. Joining two sets of genes from the same line of ancestry increases the probability that the same traits may appear in the offspring. This is fine if the traits are "good" ones but not so fine if the traits are "bad." It is not marrying a cousin that causes trouble for the offspring; the trouble comes only when the stock has too many undesirable characteristics in it. Conversely, marrying someone outside the family is good only if that someone has an ancestry of good record. Where the ancestry has more cases of weaknesses than one's own, a cousin would be a better bet.

Our attitude toward the inheritance of undesirable human traits is therefore more hopeful than it used to be before we understood the biological basis of heredity and the possible influence of environmental conditions.

Isolated cases of undesirable traits do not cause concern. Probably even the best families have one or more persons of mental or physical weakness on their family trees. Where great concentration of weaknesses occurs in a family background, it is possible to use scientific knowledge and skill to provide conditions that will encourage the development of the desirable and discourage the undesirable characteristics in the offspring. This applies to everything, not just to insanity—but to tuberculosis, to "nervousness," to mental ability, to anything—and it challenges educators to do their part in providing the "right conditions."

HEREDITY AND CHILD DEVELOPMENT

Science has discovered very little about the laws of heredity as applied to man. We speak of "characteristics," or "traits," as the things that are inherited—their potentialities being carried in the germ cells. We mean, however, something simple, like eye color, hair color, or the shape of the wings of the fruit fly and not the complex things like generosity or bad temper which in common parlance we call characteristics, or traits. Most of our knowledge of hereditary laws is limited to rather minute traits, which taken alone are relatively insignificant in the life of the individual.

There is still a great deal that we do not know about the inheritance of human traits. When I hear someone say with an air of finality, "John inherited his disposition, his walk, his hair color [or what not] from his father, his grandfather, or some other particular ancestor," I envy that person in his belief, even while realizing that it has no basis in scientific fact. It would be so nice if we did know enough to make definite statements like that. The trouble is that, in the year 1939, we don't.

So, as you study children, their personalities, and their family backgrounds, keep an open mind about the contributions of heredity and environment to their development. Do not jump to the conclusion that because the parents are thus and so, their children will show the same characteristics. Human heredity is not so simple as that, and we do not know enough to be dogmatic about what will or will not happen in any particular case. Furthermore, environmental influences operate from the moment of the formation of the new cell, complicating the picture.

At any stage in its existence from fertilization to adult maturity, the individual harbors potentialities as yet unrealized. Babies are not born, nor yet conceived, as completed wholes. They grow slowly through a period of twenty years or so (perhaps longer); and all that time, the influences of nutrition, human contacts, education, and countless other factors either help or hinder the development of the potentialities with which that individual was endowed by heredity.

REFERENCES

LIST I

KENYON, JOSEPHINE H.: *Healthy Babies Are Happy Babies*, Little, Brown & Company, 1934.
Chapter I. Before the Baby Comes. pp. 3–45.

Langdon, Grace: *Home Guidance for Young Children*, John Day Company, Inc., 1931.
Chapter I. The Baby's First Nine Months, or Pre-natal Care. pp. 3–35.

Strang, Ruth: *An Introduction to Child Study*, The Macmillan Company, rev. ed. 1938.
Chapter III. Hereditary Influences. pp. 24–33.
Chapter IV. Prenatal Influences. pp. 34–45.

LIST II

Fisher, Dorothy Canfield, and Sidonie Matsner Gruenberg, ed.: *Our Children*, Viking Press, Inc., 1932.
Chapter III. The Child as an Organism. pp. 29–35.
Chapter IV. What a Child Is Born With. pp. 36–48.
Chapter V. The Chemistry of Growth. pp. 49–59.

Glover, Katherine, and Evelyn Dewey: *Children of the New Day*, D. Appleton-Century Company, Inc., 1934.
Drama of Growth:
Introduction: The Pattern of Growth. pp. 59–69.

Goodenough, Florence L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.
Chapter III. Our Hereditary Background. pp. 27–59.
Chapter IV. Prenatal Development of the Nervous System and of the Body as a Whole. pp. 60–81.
Chapter VI. The Behavior of the Unborn Child. pp. 113–125.

Jennings, H. S.: *The Biological Basis of Human Nature*, W. W. Norton & Company, Inc., 1930.
Chapter I. The Original Differences between Individuals; and Their Consequences. pp. 1–35.
Chapter II. How Do We Know That Genes Are Realities? How Do We Know that They Affect Characteristics? pp. 36–75.

Chapter III. How Do the Genes Act in Producing the Individual? The Nature of Development. pp. 76–101.
Chapter IV. The Nature of Development (*continued*) pp. 102–121.
Chapter V. Role of Environment in Determining the Characteristics of Individuals. pp. 122–138.
Chapter VI. The Relative Importance of Heredity (Genes) and Environment. pp. 139–151.

Rand, Winifred, Mary E. Sweeney, and E. Lee Vincent: *Growth and Development of the Young Child*, W. B. Saunders Company, 1934.
Chapter VII. The Biological Development of the Child. pp. 247–286.

3 . . . Babyhood

THE FIRST AND SECOND YEARS

BIRTH may not be the real starting point of an individual, but it marks the beginning of his life as an independent organism and offers the earliest opportunity for first-hand study of children. This chapter covers the period from birth to the second birthday—the first twenty-four months of life.

Let us begin by contrasting the baby at the beginning of this period, when he is just born, with the child at the end of this period, when he is practically two years old. The newborn baby hardly seems like a baby at all. The child who has lived two years is almost out of babyhood, a little human being with independence of locomotion and a mind of his own. Refresh your memories by a glimpse of a newborn (or tiny) baby and a child about to have his second birthday. The changes that take place in the brief span of the first and second years of life are astounding.

SOURCES OF INFORMATION

There is a great deal of scientific material about this age. Most of it comes from two main sources, research studies by child development specialists and daily observations by doctors and nurses.

Surprisingly enough, considerable research has been done on newborn babies. Back in 1917, a psychologist named John Watson, believing that the tiny baby was "not too fragile" to be scientifically studied, began what is now a famous series of experiments on the emotional responses of the newborn baby.[1] In a laboratory especially set up to safeguard the welfare of the children, he studied the responses given by infants a few minutes old when their arms were held down at their sides, when they fell a foot or so into the hands of an assistant, when animals such as rabbits and white rats were presented to them, and when loud banging noises were made. From these experiments Watson not only developed an important theory of emotions but demonstrated that babies were really quite hardy little animals, that experimenting with them was productive of worth-while results and did not harm them in the slightest.

Since that time, many different studies of the newborn baby have been made, and one of the outstanding centers for research is Ohio State University. Other universities have conducted research on children a little bit older. The Psycho-Clinic at Yale University under Dr. Arnold Gesell[2] has elaborate facilities for photographing and studying infants and has published several books on the results of its experiments. The universities of Iowa and Minnesota in their child welfare departments guide graduate students in research in all phases of child growth and development—

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[1] WATSON, J. B., and J. J. B. MORGAN, Emotional Reactions and Psychological Experimentation, *American Journal of Psychology*, 28: 163–174, 1917.

[2] GESELL, ARNOLD, and HELEN THOMPSON, *Infant Behavior—Its Genesis and Growth*, McGraw-Hill Book Company, Inc., 1934.

nutrition, physical growth, or education, for example. The result is a mass of research data about the child under two. Most of it is rather technical and can be mentioned here only so that child study students will know in general of the work of these centers.[1]

The second source of information about the child under two is found in the observations and opinions of doctors and nurses on child care and growth. A varied assortment of books and pamphlets is on hand, largely addressed to mothers with all degrees of intelligence and in all walks of life. The material contained in these is for the most part based on the experience of experts in the care of babies and their parents. It is not the result of research in the usual sense of the word but an accumulation of personal observations over a period of years. Such a book was "Holt's Baby Book"[2] which was the bible of young mothers some years ago. Written by a doctor who was a specialist in children's diseases, a pediatrician, it set forth advice and reassurance in the care and feeding of babies and many other things essential to their welfare. Since then, many other books and pamphlets have been published. For the most part, they are concerned with physical care and treat psychological development only incidentally; but by their very numbers, they form an important source of information about the growth and guidance of the baby in its first and second years.

In the last analysis, it is not the books but the babies themselves that are the really important sources of information about the ages from birth to the second birthday, so the child study student must look about for real babies to observe.

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[1] Visitors are permitted at these universities if arrangements are made in advance, and you will find it worth while to spend an hour or two there if you are in the vicinity. It is best to make an appointment in advance.

[2] Holt, L. E., *Care and Feeding of Children*, D. Appleton-Century Company, Inc., New York, rev. ed. 1927.

OBSERVATION OF A NEWBORN BABY

The newborn baby is hard to find under circumstances conducive to observation. Tiny babies are usually in hospitals these days and very carefully protected from the outside world. Most hospital nurseries have glass sides, and visitors are permitted to view the babies only through these partitions. For members of the family, the nurse will bring the baby out of the nursery, and then one is permitted to peek in between the blankets for a brief and unsatisfactory glance. A tiny face, all wrinkled and red, is all that can be seen. The baby is usually asleep, and if he does wake up while you are ohing and ahing over him, he still keeps his eyes closed and merely stretches a bit, permitting glimpses of his doubled-up fists as he wiggles them loose from the coverings. He may quite possibly open his mouth for a yawn. But, all in all, viewing the newborn baby in this way is a disappointment. In the first place, he doesn't look at all like the babies we see in the advertisements; and, secondly, so little of him can be seen that the picture of his activities is far from complete.

You will never really appreciate the marvel of human growth until you have seen a newborn baby without any clothes. About the only time this is possible is when the baby is having his first bath, a few hours after birth. Hospitals are reluctant to admit observers at random, but usually they can arrange a demonstration for a group of students. In one of the classrooms used for training nurses, students can don gowns and sometimes masks and watch an experienced nurse undress, bathe, and dress a tiny baby. The whole process takes but a few minutes and cannot be prolonged long because newborn babies get cold so quickly. You could profitably watch more than one baby bathed at a demonstration, or you could spend the rest of your time at the hospital observing the nursery babies through the glass partition. With a careful planning on the part of students and hospital staff, observations of newborn babies can be made without disrupting the hospital.

The Physical Equipment of the Newborn Baby

Suppose, now, that you are arrayed in a hospital gown watching the nurse bathing the tiny baby. What should you look for? Let us begin at the top and work down. Notice the shape of the baby's head. It seems large in proportion to the body, and it is quite possibly out of shape, not the smooth, well-rounded contour that we are accustomed to think of as characteristic of the human head. The nurse will point out to you where the soft spots are in the skull, places where bones have not grown together. By this provision, the head, which is the largest part of the baby, can be compressed to ease its passage through the birth canal. When labor is prolonged and difficult, the head may be pressed out of shape a bit. In a few days, it will return to normal. Not only is the baby's head large and possibly a strange shape, but it is very wobbly. To the novice it doesn't seem to be stuck on safely. The person who is not used to handling babies has the feeling that if not supported the baby's head might fall back or forward so far that it would fall off. Of course that isn't so; it is quite firmly held on by muscles, bones, nerves, and connective tissue, but it is true that the muscles have not yet developed sufficiently for the baby to hold his head in place at will. That is the reason that nurses are always careful to put a hand under his head when lifting a tiny baby.

If the baby you are observing is obliging enough to open his eyes, you will notice that they seem to move independently of each other and do not focus on things as our eyes do. People who do not know small babies sometimes think that the baby is cross-eyed or that something else is the matter with his eyes, but this is not the case. The mechanism for focusing the eyes has not developed completely at birth.

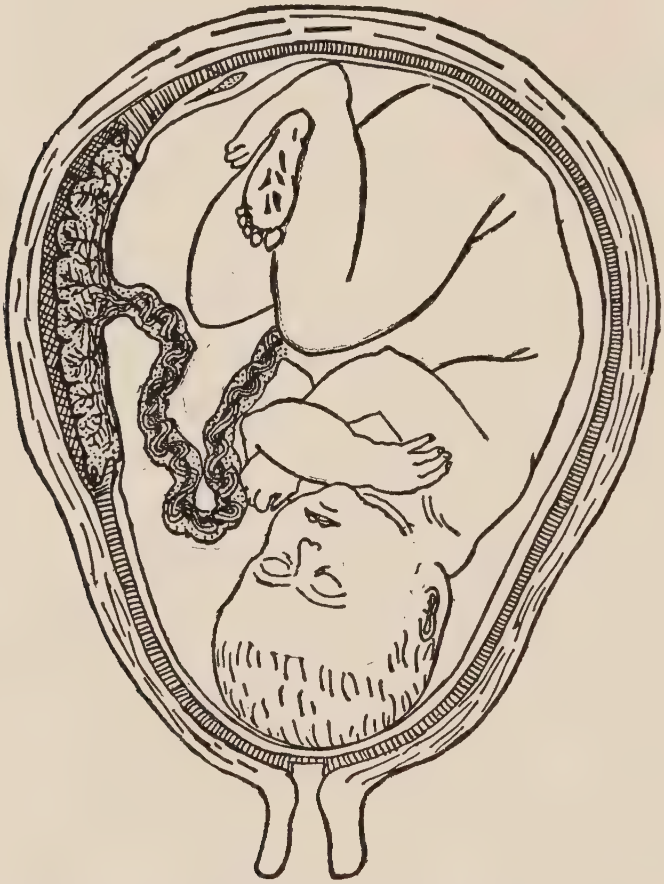

Fig. 8.—Diagram of uterus near end of pregnancy. Note similarity of position of arms and legs to that of newborn baby. (*After Wieman, "An Introduction to Vertebrate Embryology.*)

Notice, too, how large the upper part of the face is in comparison with the lower part; how flat the nose appears; how tiny the jaw and chin are. This gives the baby a different facial appearance from the adult.

Moving down from the head in your observation, notice how large the abdomen seems. When the baby is on his back, the abdomen sticks up in the air like a miniature mountain. This is due to the size of the liver in which iron is stored during fetal development. The liver of the newborn baby has almost twice as much iron in proportion to body weight as that of the adult. Mother's milk is not able to supply the amount that the baby needs in the first few months of life, so the iron is stored in the liver before birth.

The baby's arms and legs are very short in proportion to the rest of his body. They are usually quite skinny at birth. The hands are tiny, with fingers and even fingernails beautifully formed. The fists are usually clenched tightly together. The legs are bowed, pulled up close to the body, a continuation of their position in fetal life.

The nurse will tell you what the baby's birth weight was. Seven pounds is about the average weight; and 20 inches, the average length. As you know, there are wide variations. Three babies who received publicity because they were the first babies born in New York City in 1938 were a 6-pound 10-ounce boy, a 7-pound 13-ounce boy, and a baby girl weighing 7 pounds 7 ounces. The nurse in charge of the hospital nursery will probably give you the weights of the babies born the last week, for instance, so you can see how the weight of babies at birth varies. It will be interesting for you to know something about the parents of the babies, their home conditions, whether they are first babies or come from large families. Any significant details of the prenatal care of the mothers, of labor, and of delivery will help you evaluate the babies' development at birth.

So much for the physical equipment with which children come into the world. We have seen that in many respects this equipment is incomplete and certainly very different from that of the human adult.

Early Italian painters pictured the Christ Child as a miniature adult, but observation of a real newborn baby shows how far wrong they were in their conception.

The Activities of the Newborn Baby

What can the baby do? With what activities is he equipped at birth? Those functions necessary to maintain life, like breathing, digesting, and excreting, are of course in working order when the baby is born. Certain other activities whose function is not so essential to existence, like yawning, crying, and sneezing, are also performed within a few hours after birth. As for muscular activities which we can observe directly, the arms and legs seem to jerk out independently, the head rolls from side to side, and the eyes also roll in their sockets. When you touch a child on any part of his body, his whole body responds, not just the part touched. He may draw up his legs, beat his arms about, and roll his head, all in response to a stimulus applied to his abdomen or to any other spot.

These "mass movements," as they are called, illustrate one of the principles of growth, that movements of the body as a whole precede movements of the separate parts of the body. This will undoubtedly be demonstrated several times while the nurse is bathing the baby. Watch what happens when the washcloth is applied to the baby's face or the dressing to the cord. General activity of many parts of the body will be the usual response.

It is still a question how much the newborn baby sees, hears, smells, and tastes. Even after years of research study, there is disagreement among the authorities on these points. On the whole, the problems are rather academic than practical, and it would not be profitable for us to consider them here in detail. From our observation, we see that a baby a few hours old seems rather removed from the world; that we have difficulty in "reaching him" through the senses of sight, hearing, taste, and smell. The gist of the matter is that the sensory mechanism, like many other body mechanisms, is not completed by the time the baby is born.

Premature Babies

A premature baby is obviously less finished than a baby born at full term. He is born before the usual fetal growth has been completed and is deprived of the protection of his mother's body while this growth is taking place. For these reasons, he starts out with a handicap and must receive very special care at first. However, medical science, with its incubators and improved techniques of feeding, is now able to give many of these premature babies such a fine start that after a couple of years the signs of prematurity have disappeared, and no further allowance need be made.[1]

At the end of your observation of the newborn, you will no doubt see in him more than the wrinkly, red face in a mass of blankets which we described at the beginning of the chapter. You will understand him not as a completed organism at birth but as a bundle of potentialities. In almost every sense, a new baby is unfinished. His nervous system is not complete; his organs are not full grown. As an individual and a member of the human race, he has come into the world to continue the growth and development that began at fertilization and went on during prenatal life.

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[1] Kenyon, Josephine H., *Healthy Babies Are Happy Babies*, p. 66, Little, Brown & Company, 1934.

How much can his development be influenced by environment? Apparently more than we used to think. Many of the things like intelligence and height, which were previously believed to be unchangeable, are now known to be effected by living conditions. That puts the problem squarely up to parents, educators, and social workers. Failures can no longer be traced to Johnnie's ancestors long dead but to people and things that have touched his life since birth. Every newborn baby is a more hopeful candidate for President of the United States now than formerly.

ADOPTION

Nowhere is this change in point of view more evident than in the increase in the number of adopted children. The demand for children is now much greater than the supply. Foster parents feel that if they take a baby young enough, their influence and training will tell as much as if not more than his heredity which was not their responsibility in any sense.

Talk with some parents of adopted children, and see how they feel on this point. What do they know about the heredity of the child they adopted? Do they accept responsibility for his behavior, or do they blame certain things about him on his heredity? If you can learn from them what they looked for in the child's family background before they accepted him, you will have a good idea of their opinions on heredity.

Discuss adoption problems with some social workers who are familiar with them. See what facts about a child's ancestors make him a good adoption prospect and what a poor one. Find out what proportion of children are adopted as tiny babies and what are the reasons for this. What demand is there for older children, and why are some parents willing to take children who have already been influenced to a considerable extent by environment? Study the way parents and nurses treat the children in their care, and try to figure out for yourself how this affects their dispositions, their intelligence, and their personalities.

Think about all this as you observe small babies and come to appreciate how unfinished they are in every way. It is another aspect of the heredity and environment controversy that we discussed in an earlier chapter; and now that you are face to face with a real live baby, the problems will seem more real and important.

OBSERVATION OF THE NEONATE

After observing the newborn baby the next age to observe is the "neonate." Perhaps this term is new to you. It means a child in the first few weeks of life—some of the authorities say the first two weeks; and others, notably Gesell,[1] the first four. A good place to see the neonate is in the hospital nursery. Station yourself at a vantage point outside the glass partition. If the crop of babies has been good that week, you can see several, although you can't see very much of any one of them. The chief things to notice here are the differences between the babies. Compare the shape of the heads, the amount of hair each baby has, the features, and the fullness of the faces. These are some of the structural differences which might be due to differences in heredity or to differences in the age of the children. Remember that the babies were not all born at the same time. Any nursery will provide babies of ages from a few hours to two or three weeks, and differences of a day or two in age are noticeable with tiny babies. See if you can guess which baby is the oldest, which the youngest. Give reasons for your guesses.

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[1] Gesell and Thompson, *op. cit.*, p. 268.

Besides the structural differences, notice what the babies do. If you are fortunate enough to observe just before the feeding hour, there will be considerable activity on the part of the babies—lots of wiggling, heads turning from side to side, mouths opening, arms and legs waving about. Some babies will fuss quietly, whereas others will be red in the face with temper. In any hospital nursery, if one watches long enough, there will be an opportunity to see how children differ from the very beginning in the way they react when they cannot have what they want when they want it.

OBSERVATIONS OF OLDER BABIES

After your observations at the hospital, look about for older babies to observe. These you will find in their homes or in places where they are taken for their daily outings. Make a trip to the park some sunny morning, or observe awhile outside the grocery store at shopping time, and you'll find a variety of ages and an assortment of colors. Try to guess how old the different babies are, and then talk with the mothers about their children. Most parents take very kindly to people who show interest in their babies; and if you are considerate and helpful, you will undoubtedly be granted the privilege of watching the baby for awhile. By cultivating the mother's friendship, even without a formal introduction, you may gain access to the home and a chance to observe the child there. There is no limit to the opportunities that will be opened to you once you use initiative and kindliness. So don't be discouraged if you don't know any young babies to observe. Just look about you, select one you would like to study, and get yourself an introduction. Be sure to observe one or two babies in their homes. This is the age that offers you the best opportunity to study the influences of home and parental guidance. Plan to observe in homes that are different from your own so that you can better appreciate the variety of backgrounds in which children are being brought up in the United States.

Where several students are studying the same babies, they are likely to get in each other's way and be a nuisance to the mothers unless observation arrangements are carefully planned and regulated. The procedures developed during the author's child study work at Vassar College are given in Appendix III, page 318, in considerable detail in the hope that they may prove helpful in places where large groups of students are studying the same age at the same time. Let us suppose that you are observing Johnnie in his home with his mother hovering about. What are the things to look for?

Detailed suggestions of special things to notice at different age levels will be discussed farther on in this chapter. The few things mentioned here are applicable generally to all the ages from birth to two years.

GENERAL OBSERVATIONS

First of all, look for the signs of health—bright shining eyes, pink cheeks, sturdy legs, lots of activity, boundless energy. There is no one thing that tells us that a child is well or ill. Don't be misled by pale cheeks or a yawn or two. It is the total picture that counts. Take notes on the things that seem to you significant, and discuss the possible causes for them.

Notice how the child uses his hands and his fingers, how accurately he reaches for something he wants. What words does he use, or what sounds does he make? Does he sit up? How does he stand? For how long? With what support? What does he do to get what he wants? To what extent does he struggle, cry, or give up? What is his mother's attitude toward him? Does she worry much? Is the child getting an adequate diet? Enough rest? Does he seem like a happy baby? You can get the answers to these questions in three ways: from your own observation; from information the mother gives directly; and last, but by no means least, from interpreting the significance of the facts. For instance, you do not ask whether the baby is happy. You have to infer it from all that you can hear and see yourself and from what the mother tells you of the way he behaves at home.

Information about parent-child relationships and home conditions usually has to come indirectly from the observation. Do not become so absorbed in the baby that you fail to notice things that are indicative of the conditions under which the child is living and developing.

OBSERVATIONS OF SPECIAL PHASES OF DEVELOPMENT

One way to make an observation profitable is to concentrate on one phase of development—use of the hands, for instance. Make detailed notes of what the baby does with his hands, how he uses his thumb and fingers, how accurate his aim is when reaching for something, and many other details concerning the use of his hands. Then read what the different authorities say about eye-hand coordination of children that age, and see how this baby's development compares with it. Only against a background of scientific evidence can you evaluate the development of an individual child in any phase of growth. At another time, you could study health, language, social reactions, locomotor-postural development, or other phases of development. Studies of this kind help students integrate and evaluate material gained from observation and from reference reading.

There is no limit to the number of home visits and observations that will be profitable in your study of babies, but your time will probably be limited. Observing two children of the same age or of different ages at the same time can make even a few observation periods cover quite adequately the period of growth from birth through the first and second years of life. Babies of three, six, nine, twelve, fifteen, eighteen, and twenty-one months are the ages for you to observe, if you can, but it is difficult, if not impossible, to get as many children as this just at the age that you want them. The child whose mother can conveniently let you come to see him next Tuesday will be seven and a half months old, whereas the six-month-old baby you would like to observe has a cold. It takes quite a bit of planning to observe the proper ages at the proper time, but you will be well repaid for the trouble, and there is no substitute in child study for a real live baby.

THE BABY AT SIX MONTHS

Because of the pressure of your work, you may have to skip from an observation of tiny babies in a hospital to one of a six-month-old child. At least, that is what we have to do here in this chapter because of limitations of space.

Let us look now at six-month-old Johnnie. How does he differ from the younger babies you have seen? What can he do at this age?

At six months, Johnnie looks more like the conventional baby pictures in advertisements than the newborn baby did. His face is round and filled out. The wrinkles and redness have disappeared. He holds his head up and is alert to all that goes on around him. Too, he has probably developed a personality all his own, difficult as it is to describe it in scientific language.

There are a few landmarks of physical development for you to look for. His weight is probably a little more than double what he weighed at birth, or 14½ to 17 pounds. His length will probably be about 25 inches. If he has any teeth, he is a bit unusual, because the first tooth is not expected until about seven months of age. His abdomen is much flatter, less like the miniature mountain it was when he was a newborn baby. His legs are not so bowed or his muscles so flabby as they were when he was only a few hours old.

More than that, a six-month-old baby is no longer a helpless creature. He does not walk, of course, but he can roll over by himself. When held in a standing position, he pushes with his toes, jumping up and down and getting evident enjoyment from the activity.

Johnnie's language development is probably in what is called the "babble stage." He makes lots of sounds with little or no distinguishable meaning. He coos and gurgles and occasionally utters short sharp screams in vocal play, but he does not say words as we know them.

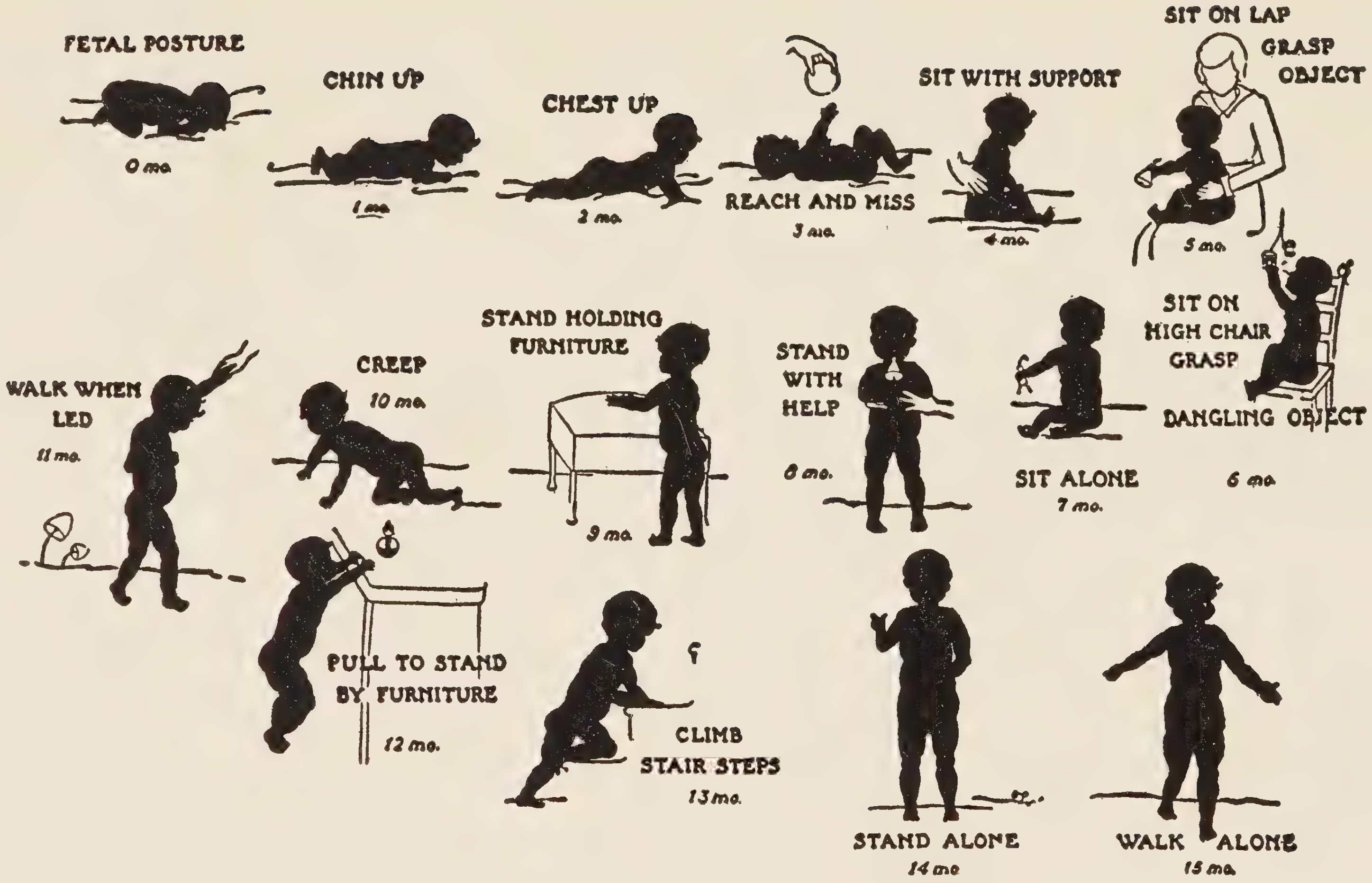

FIG. 9.—The motor sequence. (*From Mary M. Shirley, "The First Two Years," University of Minnesota Press.*)

It is unusual if a baby of six months sits up very long without support. Most babies of this age need to be propped against pillows and tend to flop over on their sides or their faces when they sway too far off balance. In other words, their sitting posture is decidedly insecure and cannot be maintained independently very long. After viewing the world from a sitting position, a baby usually resents being placed flat on his back. From that position he can't see what is going on around him. If you want to start an argument with six-month-old Johnnie, just try putting him down flat after he has been held in your arms or has been sitting up for awhile.

Look at the way Johnnie uses his hands. He still grabs things with his whole fist, not with "thumb in opposition" to his fingers as adults do. When a bright-colored ring is presented to him, he reaches for it, although his aim is far from perfect. It is only after several stabs that he finally gets hold of it. Present him with another ring, and he will probably drop the first one and reach for the new one with the same hand. As he reaches, the other hand will make similar motions, a vestige of the mass movements that were noticeable in the newborn baby.

Note the way the child responds to his mother. Johnnie will not let her move far away from him. He seems to want her very close; and when she is a few feet away, he wrinkles up his face, puts his arms up to her, and begins to cry. Another child of the same age may let his mother sit far away from him or even go out of the room. It will be interesting to try to find reasons in the mother's behavior for the child's reactions to her. To what extent does she give in to him when he whimpers? How does she help him meet difficult situations? Even at six months or earlier, children show individual differences in the way they face problems, which can be explained in large measure (not entirely of course) by the way parents and nurses treat them.

THE BABY AT A YEAR

Another accepted landmark for the baby's growth comes at the first birthday. An observation of a year-old baby will show many ways in which the youngster has changed from the time when he was six or even nine months old.

Physically he has grown about 9 inches longer than he was at birth and has tripled his birth weight. He probably has some teeth, the upper and lower incisors being the first ones to erupt.

He not only holds his head up and sits up alone for indefinite periods of time, but he now stands up and possibly takes a few steps. Notice the ways in which the child you are observing shows his readiness to walk; how he pulls himself to a standing position on the sides of the crib and dances up and down on his toes; what happens when he lets go his hold on his support; and how he sways in the middle and finally sits down with a "plump." If he does not stand up or walk, note whether he creeps or hitches forward or backward, and how. It is expected that a baby will take a few steps alone on his first birthday, but there is no cause for concern if he does not do this until sometime later. Delayed walking is no longer considered indicative of low general intelligence, as it once was. It may merely mean that the child is not in good physical condition, that he has been frightened by a fall, or that he gets about so well by other means that he has no need for walking.

Notice the year-old baby's use of his hands—how he lets go of things as well as how he picks them up. What size things does he hold voluntarily, and how long? Does he let go slowly and with muscles under control as adults do, or does he drop things with a sudden release of tension as if he had held the object as long as he could? You will probably see indications that to hold small things, like a spoon or pencil or even the edge of a book, is a strain for the year-old baby. This is not the age for teaching him to feed himself, to button buttons, or to cut with scissors, for instance. Let him help if he wants to, and let him give up when he wants to. In this way, he can exercise without fatigue or undue strain the small muscles that control the hands and the fingers.

Watch the way the youngster you are observing "mouths" the colored ring you give him, how he turns a cup or block upside down as he puts it to his lips. He has developed to the point where he can reach for something, take hold of it, and put it in his mouth deliberately, not just accidentally as he did earlier. This is a new accomplishment, and as such he practices it repeatedly. It is therefore important to see that his environment does not contain things that would be harmful to him, like poisons or sharp pointed objects. A little teaching is permissible, with an occasional "No-no" and a shake of the head, but it is certainly not worth while to nag the child in the hope of keeping him from putting things in his mouth. His lips are extremely sensitive to touch, and it is quite natural for him to wish to feel things with his lips as well as with his hands.

His increased skill in using his hands has to be planned for, too. At a year, a baby's aim is quite accurate. He can reach for, grab, clutch, and pull toward him things that catch his eye. He sometimes picks up things with his thumb and finger in opposition, although he still often grabs them with his whole fist as he did when he was younger. He spies small objects like pins and screws, and of course he puts them in his mouth. Nothing is safe from his marauding hands. A bottle of medicine on a table, a cover hanging over the side, and a year-old-baby in close proximity may spell tragedy, as the newspaper accounts of accidents bear grim witness. The baby needs to use his hands to experience softness, hardness, cold, warmth, and the shape and feel of different materials—all the many sensations that help him interpret this world in which we live. But freedom to explore should be hedged about with safeguards and supervision; else disaster may result.

Whether or not the year-old baby walks, he undoubtedly has a way of getting about by himself which has to be reckoned with. He is no longer content to lie still for hours at a time, as he did when a tiny baby, or to spend many of his waking hours sitting happily propped up in a corner of his play pen. He wants larger fields to explore, and this presents a problem in the household. To give him the run of the house means that he will be into everything. To confine him continually to the small area of his play pen means that he will not get the exercise he needs for good muscular development. A room of his own, as foolproof as possible, in which to spend most of his waking hours will give the family peace of mind and the youngster a chance to exercise. Where this is not possible, a short period of exploration in the rest of the house or outdoors each day will meet the need of the year-old youngster to try out his newly developed means of locomotion.

The language development of the baby at a year consists largely of a flow of jargon, out of which three or four words are distinguishable. Words like "dog," "down," and "mama" he uses as a trick, to show off, more than as a means of expressing himself. Make a list of the words used by several children twelve months old, and compare it with the lists given in the references. Note the tones and inflections of the jargon the children use, and see if you can recognize phrases used by their parents or nurses. By and large, the baby of a year has only a limited command of language as we know it.

Socially, the year-old baby is quite accomplished. He smiles in response to the smiles of others and can play pat-a-cake and hide-and-seek when the spirit moves him. Whether or not he goes to strangers willingly will depend on his previous experience with people he does not know and the extent to which he has learned to depend on parents and nurses for a feeling of security. If he has always been cared for by two or three persons, then a stranger is likely to be upsetting; and if that stranger has a loud voice or picks him up too roughly or aggressively, there is added reason for him to be distrustful.

Watch two children about the same age as they play near each other. One child will reach out to touch the other, perhaps drawing his nails across his face or squeezing or pinching him. He apparently wants to make friends with the other baby, but his techniques for social approach are imperfect. He can't say, "Hello, how are you?" yet, and he probably confuses the baby with a doll, but he does want to be friendly in his own crude way. This behavior is noticeable at younger ages than twelve months; but if you have not had an opportunity to observe two babies at the same time for any of the earlier ages, you should do it now so that you can see the social responses of the year-old baby with other children.

Before we leave the discussion of a year-old baby let us look for a moment at the changes that are necessary in the environment of the child from the time he is brought home from the hospital until his first birthday. The type of food he is given is more complicated to prepare and to eat than the milk he had at first. The space allotted to him in the household has had to be enlarged to include a room of his own, a play pen, and a place to keep his toys. The care he receives from adults, although not so much greater in point of time, is certainly very different in kind from what it was when he was a tiny baby. He doesn't need to be fed or changed so often, but he does need to be watched almost every waking moment. He can roll off sofas and beds with ease, grab powder tins and safety pins, and get underfoot most amazingly. A tiny baby stays put and sleeps peacefully most of the time. A year-old child seldom stays put unless he is asleep, and he sleeps much less of the time. In many ways, it is easier to care for a tiny baby than for one a year old.

While you are looking at a baby of a year, think back to the newborn baby you saw in the hospital, and try to imagine the changes that have taken place in him in the short space of twelve months. Each month has brought about remarkable growth. And as the child progresses from one stage to the next, he needs special care and guidance to help him realize the potentialities that lie within him.

THE BABY AT EIGHTEEN MONTHS

Eighteen months is considered by some authorities to be the end of the period of infancy and the beginning of the first period of early childhood. In many ways, the child of that age is no longer a baby but a very definite individual personality.

If physical growth has proceeded according to schedule, the eighteen-month-old baby will weigh about 23 pounds and be about 31 inches in height. The "about" means that variations will be found as they were in birth weight, all within the average, or normal, limits. Figures are given merely to indicate the growth in height and weight that takes place in the first half of the second year (from twelve to eighteen months).

He will have more teeth, too, than he did at a year. From twelve to sixteen is the expected number. The twelve will be the four upper and four lower incisors and the first four molars. The other four which the child might have are the two upper, or "eye teeth," so-called, and the two lower "stomach teeth."

The proportions of the child's body have changed so that now the head seems smaller, and the arms and legs longer. His abdomen is no longer prominent, since the liver supply stored there before he was born has long since been used up. His legs are strong and sturdy and straight, not bowed as they were at birth.

Most babies are able to walk quite independently at eighteen months. The period from twelve to eighteen months is the time when children learn to walk, so to speak. They go through the stages of toddling, tottering, and finally walking. At first, they hold on to willing hands, push a chair or a baby buggy in front of them for support, then take a step or two alone with frequent loss of balance and many falls. From these stages, a child graduates to walking alone without support, his arms down at his sides, since with increased skill he no longer needs to keep them in the air for balance. The eighteen-month-old baby whom you observe will probably want to show off his walking accomplishments. He will prefer to walk by himself to being carried or held on someone's lap. He will also like to climb and pull himself on chairs and tables and anything else that is available. It is probable that if you present him with a small chair, he will not know how to sit down on it. Getting up seems much more natural to him than sitting down. Instead of lowering himself slowly to a sitting position as adults do, he sort of squats over the chair and then sits down with a bump. Chair or no chair, he is constantly active and remains quiet for only short periods of time.

An example of an observation record made by a student is given here to show the locomotor activity of one eighteen-month-old baby.

> He carried things to people on the porch, a spade, a wheelbarrow and a cart. He stooped over to pick up the spade and arranged his feet several times before he could keep his balance as he leaned over. He backed down two steps of the porch on his hands and knees and walked up and down a narrow path on the lawn. He waddles a little when he walks and runs with his feet wide apart, shifting his weight from one side to the other. When he fell down, he picked himself up by keeping his hands on the ground till his feet were in stable position, then raised himself to an erect position. (S. L.)

Not only is the eighteen-month-old baby active in running around, but his hands seem to be into everything. He opens doors, pulls out drawers, turns on the gas, switches on and off the electric lights, and moves everything that can be moved. It only takes a short time for an eighteen-month-old baby to work havoc in a room. One youngster this age pulled apart all the neatly wrapped Christmas presents for the family a few days before Christmas. When discovered, the room looked as if a cyclone had struck it, and the eighteen-month-old stood in the midst of a mass of tissue paper, cellophane, and ribbon smiling gleefully over the fun he was having. All this manipulatory activity can be very bothersome to adults, but it is the way that the youngster learns about the world about him. He should have things of his own to pull, turn, and push if he is prohibited from experimenting with ours. Proper equipment for him to play with and a safe place for him to use it will meet his needs for constant activity of hands and body. The choice does not lie between prohibiting or permitting an eighteen-month-old child to handle everything in the house but rather in providing materials that he can handle with safety and enjoyment.

The language development of an eighteen-month-old child is not much advanced over what it was at a year. He can perhaps say a few more words and can make himself understood with grunts aided by the sign language, but on the whole he talks very little and still does not have an adequate command of language. He understands much more of what is said, however, than we give him credit for. He is too old, and has been for some time, for us to talk about him in front of him. Even big words that he does not understand cannot keep from him the fact that he is being talked about, and invariably something of the significance of our attitudes carries over to him. He may not know what we say, but he can tell by the way we say it how we feel. We shall save ourselves a great deal of trouble if from the beginning we make it a rule not to talk about any child in front of him.

The eighteen-month-old will undoubtedly be feeding himself quite a bit. Sometimes between twelve and eighteen months most children want to help feed themselves, and it's a good idea to let them do it whenever they want to. If a child has had an opportunity to hold his own cup as he drinks from it and to feed himself with the spoon, he may be fairly proficient at these tasks at eighteen months. It is probably true that he will be interested in doing these things only during a part of each meal. His attention span is short, and his muscular development incomplete, so that he finds it uncomfortable to hold the spoon or the cup for very long. Even at eighteen months he will not handle the tools in the usually accepted fashion. He will take both hands to the cup and grasp his spoon with a tight overhand clutch but will enjoy feeding himself for a part of every meal.

Much has been written about the importance of toilet training—the time that it should be begun and the ways of going about it. There is not space here to discuss this in detail, but somewhere between twelve and eighteen months is the accepted time to begin to teach a child to take responsibility for telling when he needs to go to the toilet. It is certainly not worth while to begin too early with this training or to make an issue of it at any time. Control of elimination comes very slowly—much more so than most adults realize. Furthermore, a little encouragement and patience will be all that is necessary to accomplish the desired results. Punishments are neither necessary nor desirable. The average eighteen-month-old child will probably take very little responsibility if any. It will be up to his mother to see that he gets to the toilet in time. He will have toilet accidents for months or even a year or more;

but by eighteen months, he will have at least a hazy idea of what is expected of him.

Toys for the eighteen-month-old child should include things that fit into each other, like nests of boxes and peg boards. They need not be elaborate; in fact it is better for them not to be. Mechanical things, such as tin animals that hop when they are wound up, hold little interest for the child of this age and are likely to be dangerous as well because of their sharp edges.

Give a child this age a peg board, and see what he does with it. Three- or four-inch pegs of different shapes, some round, some square, some rectangular with corresponding holes in a board into which they fit, will keep him busy for a long time and furnish an opportunity to observe his learning ability and his emotional reactions. Watch how he tries to force the wrong peg into the wrong hole. Count the number of times he makes the same mistake. Note what he does when he can't solve his problem. Does he give up and go on to something else? Turn to his mother for help? Get angry? Cry? The answers to these questions will give you insight into the baby's emotional development.

Because of his increased ability to get around by himself, to climb, and to manipulate things with his hands, the eighteen-month-old baby presents quite a problem in the home. For the sake of the family and of his mother's peace of mind, his activities should be limited to a foolproof environment—his own room or a play pen in the yard—except when he is under close supervision. It is disconcerting for a mother to try to do housework with an eighteen-month-old tagging at her skirts either harassing her with his demands or frightening her by his occasional periods of quiet when she wonders what mischief he is up to. It is worth while for her to provide a place for the baby to play while she is working and to make her contacts with the child less frequent but more pleasant on the whole.

GROWTH IN THE FIRST AND SECOND YEARS

Before you go to the next chapter which discusses the child of preschool age, think over the growth that has taken place in the first and second years of life. From the helpless little creature the newborn baby is to the active little personality of the eighteen- or twenty-month-old is quite a step. Physically the child has grown in height and in weight, and his body proportions have changed. He is responsive to what goes on about him, as he was not at birth; and he now takes the initiative in exploring his environment. No two babies are alike in every respect at any stage of their development, but their growth proceeds along the same general lines so that all babies the same age have something in common. In this chapter, we have emphasized the landmarks in the development of children during the first and second years of life to help you understand some of the general principles of human growth.

REFERENCES

LIST I

ANDERSON, JOHN E.: *Happy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter II. The Child's Equipment for Living. pp. 13–22.

FOSTER, JOSEPHINE C.: *Busy Childhood*, D. Appleton-Century Company, Inc., 1933.

Chapter II. The Play of the Infant. pp. 23–37.
Chapter IV. Toys. pp. 76–94.

Kenyon, Josephine H.: *Healthy Babies Are Happy Babies*, Little, Brown & Company, 1934.
Chapter II. The Baby at Birth. pp. 46–62.
Chapter III. The Premature Baby. pp. 63–66.
Chapter IV. The Baby at Two Weeks of Age. pp. 67–93.
Chapter V. The Baby from Two to Three Weeks. pp. 94–101.
Chapter VI. The Baby from the Fourth to the Sixth Week. pp. 102–111.
Chapter VII. From the Sixth to the Seventh Week. pp. 112–121.
Chapter VIII. Two Months. pp. 122–130.
Chapter IX. Three Months. pp. 131–144.
Chapter X. Four to Five Months. pp. 145–152.
Chapter XI. Six to Eight Months. pp. 153–167.
Chapter XII. The Child at Nine Months. pp. 168–178.
Chapter XIII. From the Twelfth to the Fifteenth Month. pp. 179–197.
Chapter XIV. Eighteen Months. pp. 198–222.

Langdon, Grace: *Home Guidance for Young Children*, John Day Company, Inc., 1931.
Chapter II. The First Year after Birth. pp. 36–93.

Morgan, John J. B.: *Child Psychology*, Farrar & Rinehart, Inc., 1934.
Chapter II. Infant Behavior. pp. 33–71.
Chapter IV. Motor Development. pp. 104–143.

Strang, Ruth: *An Introduction to Child Study*, The Macmillan Company, rev. ed. 1938.
Chapter II. The Baby at Birth. pp. 11–23.
Chapter V. Development during the First Two Years. pp. 49–92.

Chapter VI. How the Baby Learns. pp. 93–119.
Chapter VII. Special Problems of the First Two Years. pp. 120–138.
Chapter VIII. How to Study the Baby. pp. 139–150.

STUART, HAROLD C.: *Healthy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter XV. Special Features of Care at Different Ages. pp. 317–334.

LIST II

FISHER, DOROTHY CANFIELD, and SIDONIE MATSNER GRUENBERG, ed.: *Our Children*, Viking Press, Inc., 1932.
Chapter IV. What a Child Is Born With. pp. 36–48.
Chapter VII. Healthy Attitudes toward Health. pp. 73–80.
Chapter XX. Educating the Very Young Child. pp. 214–225.

GLOVER, KATHERINE, and EVELYN DEWEY: *Children of the New Day*, D. Appleton-Century Company, Inc., 1934.
Drama of Growth:
  Introduction: The Pattern of Growth. pp. 59–69.
  The Physical Instrument. pp. 70–89.
  The Mental Instrument. pp. 90–109.
  Emotional Development. pp. 110–127.
  The Part Food Plays. pp. 128–151.
  Habits in the Making. pp. 152–170.

GOODENOUGH, FLORENCE L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.
Chapter VII. The Child at Birth. pp. 126–157.
Chapter VIII. The Period before Speech: Physical Growth and Motor Development. pp. 158–179.
Chapter IX. Emotional Behavior in Infancy. pp. 180–210.
Chapter X. The Social Reactions of Infants. pp. 211–223.

Rand, Winifred, Mary E. Sweeny, and E. Lee Vincent: *Growth and Development of the Young Child*, W. B. Saunders Company, 1934.
Chapter I. What the Newborn Baby Is Like. pp. 17–31.
Chapter II. Growth during Infancy. pp. 32–68.
Chapter III. Care and Feeding of the Baby. pp. 69–97.
Chapter IV. Growth During the Period of Transition from Infancy to Early Childhood. pp. 98–133.

Strain, Frances: *New Patterns in Sex Teaching*, D. Appleton-Century Company, Inc., 1934.
Chapter III. Making the Right Start. pp. 24–46.

4 . . . The Preschool Age

TWO-, THREE-, AND FOUR-YEAR-OLDS

BABIES grow into preschool children. The dividing line between the two is imperceptible and different for every child. A birthday cake with two candles is the recognized symbol, but very few children leave babyhood behind and come of preschool age exactly on their second birthdays. Each child is an individual, different in many respects from others his own age but like them in other ways. In this chapter, we shall discuss the characteristics that children of two, three, and four years have in common, so that we can set up a sort of yardstick by which to measure the development of any individual child during these years.

In America, two- and three-year-olds are almost universally acknowledged as belonging to the preschool years. The position of the four-year-olds is uncertain. These children are a little too old for nursery training and too young for most kindergartens. They have been called the "no man's land of education." In Europe, the ages are grouped differently, and the dividing lines come at eighteen months, three years, and six years. Nursery schools, as we know them here, are found only in England.

For purposes of convenience, two-, three-, and four-year-olds are grouped together in this chapter, although the difference is very great between a child of twenty-four months, at the beginning of this period, and one of almost five years, at the end of it. Teachers who have worked with preschool children can tell the difference between children six months apart, so great is their understanding of the growth expected in even half-year periods. To them, a two-year-old is not just a two-year-old; he is two years plus some very important months. And so it is with the three- and four-year olds, too. At these early ages, each month of growth brings important changes; and each year of growth, a twelvefold change. This fact we must keep in mind, even though we do not consider all these changes in detail.

SOURCES OF INFORMATION

The preschool age was the focus of scientific and educational interest from 1925 to 1935, approximately. Nursery schools sprang up, dotted across the United States, and several universities became centers of research to find out what children of this age are like and what education and training they need during this stage of their growth. Outstanding nursery schools are found at Vassar College; at the Merrill Palmer School in Detroit; and at the universities of California, Iowa, Minnesota, and Toronto.

In 1936, there were at least 285 private nursery schools in the United States, an increase of 275 per cent over the number in existence in 1927.[1] And besides these schools, there were 1,913 emergency nursery schools organized under the Federal Emergency Relief Administration in forty-seven states, the District of Columbia, and Puerto Rico.

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[1] Mary Dabney Davis, A Directory of Nursery Schools in the United States as reported to the United States Bureau of Education 1935–1936, Office of Education, *Circular* 163.

As a result, a great deal more is known about preschool children than about older children. Some of the facts have been solidly established by scientific research, and others almost as solidly by the daily observation of nursery school teachers. There are many books available on the preschool age, far more than for any other age of childhood, except possibly adolescence. Some are textbooks; some are popular books written to help mothers with problems of feeding and training children. In most of them, you find the material presented from what is now called the "child development point of view," which considers all phases of development and their interrelationships. Not just child psychology or physical growth or some other single phase, but the "whole child" as a living, growing organism.

PLANS FOR OBSERVATIONS

In order to understand children of preschool age, one must have real children to study. If you have a youngster of the right age in your home, or if there is a nursery school near by where you may observe, you are indeed fortunate. But when these opportunities are not available, you may watch preschool children in their homes, in day nurseries, on the streets; and if you are enterprising and courageous enough, you may even get together a small group of preschool children for a few hours some day. It is obvious that children brought together for the first time in an unfamiliar environment, with mothers or students as teachers, will not behave so naturally as they would at home or in a nursery school. However, for a study of the characteristics of the child of preschool age, a small informal group offers a valuable supplement to the observation of a single child at home. Ideally, one should see children in as many different situations as possible—outdoors, indoors, with mother, without mother, at meals, in bed—an indefinite number of observations could be suggested. A minimum of observations of the preschool age should include at least two children, each with his own mother or some other member of his family and with other children approximately his own age.

What are some of the outstanding characteristics of children two, three, and four years old?

BODILY ACTIVITIES

Preschool children seem to be constantly active, running from place to place, climbing here, jumping off there. The activity is usually an end in itself; the fun is in the doing; and the basis is to be found in the physical development of the large muscles which is taking place during these years. The large muscles are the ones that control the legs, arms, and trunk. In contrast, the small ones have to do with the fingers and hands, and their development comes much later than that of the large muscles.

A look at some children who have just passed their second birthdays and a study of some four-year-olds will illustrate the points of similarity and difference in the "large-muscle activity" of preschool children.

Children of two are no longer babies. They have their own means of locomotion and can get about by themselves as younger children cannot. True, they are unsteady and clumsy on their feet, but nonetheless they are able to go almost anywhere under their own power. To adults they seem careless and appear to plunge headlong, throwing their bodies forward on their tiptoes as if their skill in walking were too limited to get them over the ground as fast as they want to go. Falls are frequent but usually of no consequence. Walking, running, climbing, jumping, balancing, and even falling are activities that strengthen the muscles and help the two-year-old learn to manage his own body. Guidance consists in providing materials and opportunities for him to do these things in a safe environment and in leaving him unhampered by heavy clothing or solicitous adults. In this way, he is free to practice the skills that he needs to acquire. Grownups who do not know two-year-olds are prone to pick them up too often, to carry or lift them over hard places, and in other ways to interfere with the activity so necessary to the development of the large muscles.

Watch some nursery school teachers at work, and note how seldom they pick up even the youngest two-year-old, how patiently they let each walk or climb at his own pace. Study the wealth of materials provided by any good nursery school for muscular development: jumping boards, climbing apparatus, boxes, tricycles, kiddy cars, swings, and slides. All have their place in helping the child of preschool age develop balance and control over his body. The following is a typical scene on a nursery school playground for two-year-olds.

Jane is jumping up and down on a board only a few inches off the ground, laughing gleefully the while; Peter is trying with all his might and main to stretch his short legs from one rung of the ladder to the next; Mary, who is already proficient on the slide, runs around to the bottom of the steps for "'nother slide" time after time; and John is slowly making his way on the pedal car, each push on the pedal an effort requiring intense concentration.

Three things will stand out from such an observation: the great amount of activity, largely self-initiated; the independence which even the two-year-olds display; and the keen enjoyment that the children are getting out of it.

In contrast to these activities of the two-year-olds, children who are four years old and who have had these experiences will be walking steadily and speedily, climbing sure-footedly to heights that terrify most adults. They are capable of guiding tricycles and wagons in intricate patterns with bewildering speed and remarkably few casualties. On the whole, these children are quite able to manage themselves and need little help in being lifted or pushed or otherwise aided physically. They have advanced beyond the stage of mastering the techniques of running, climbing, etc., and are using them in their play as a means to an end, not as the ends in themselves that they are to the two-year-olds. For example, the four-year-old on his tricycle will be playing traffic policeman or "daddy on the way to the office" or some other game or seeing how fast and how skillfully he can turn the dangerous corner. He will climb the boxes to see a train or a truck from the top or to pretend that the box is a boat and he the captain. Usually he does not climb for the sake of climbing; he climbs to get somewhere because it is interesting to do something there. The same is true of jumping and other large-muscle activities. On the other hand, too advanced a purpose must not be expected from the four-year-olds. There are still muscular activities that interest them for their own sake, but they are more intricate, such as hanging by the arms from the parallel bars or jumping from the top of a pile of boxes.

One outstanding characteristic of the two-, three-, and four-year-olds is the constant activity that accompanies the development of the large muscles and helps the children gain control over their own bodies.

BALANCE OF ACTIVITY AND REST

Despite the fact that children of preschool age seem to be always on the go, they actually do rest very frequently. To be sure, the resting is quite informal—just squatting here, sitting there, or even lying prone on the ground, without fuss or preparation. And it doesn't last long, in fact scarcely long enough for adults to appreciate it as rest. For example, Jane is standing in the sandbox intently filling molds with sand when quite unexpectedly she squats down, stops the activity, and looks off into space, a half-filled shovel in her hand. Is she thinking? We do not know. Watching something? Perhaps, although her gaze is not directed toward anything apparent. It is more probable that she became tired from standing and from her pouring activities and is resting, getting energy to go on again in a minute.

Like the constant activity of the young child, these rest periods also have a physiological basis. Muscle activity uses up certain body chemicals and develops others, causing the sensations of fatigue with which we are all familiar.[1] One cannot keep on indefinitely at any activity, although some people can certainly keep at it much longer than others. Rest is necessary to restore the muscles to their original efficiency, and the amount of rest needed depends on the fatigue state of the individual.

Certain minimum rest periods, before meals and at afternoon nap time, should be provided for children of preschool age, whether at home or in nursery school. Contrary to public opinion, children do not fight rest in itself; they fight only our way of giving it to them; and when adults give a little attention to surroundings and techniques for getting children to rest, the desired attitudes usually result.

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[1] Starling, Ernest H., *Principles of Human Physiology*, pp. 172–184, Lea and Febiger, 1926.

When at play, children should have freedom to rest wherever and as often as they will. Adults should not urge them to be active or interrupt their informal rest periods. There is ample proof that there is an organic need for the rest a child is taking and that once his energies have been restored, he will become his active self again. In reality, the "constant activity" of preschool children is not so constant after all. There are many short periods of rest to balance it and keep the organism from being fatigued.

While you are watching preschool children at play, note the ways they "rest"; the number of times they sit on the ground or on the floor when more comfortable seats are lacking; the way in which they rest without sitting down, such as sprawling, leaning, or lying on their stomachs or their backs. See, too, the way they plunge into their activities after a short period of rest. It would be worth while spending quite a little time studying this phenomenon of the balance of activity and rest in preschool children, because it is an important but little understood phase of development.

USE OF HANDS

What growth can be expected in the use of the hands during the years two, three and four? From the viewpoint of adults, the preschool child's hands seem to be into everything. "Seeing" to him means handling, and nothing escapes his manipulatory investigations. Because his skill is but imperfectly developed, disasters often occur which are cause for discipline and lamentation. Two points about the use of the hands during the preschool years are important: one, that handling is one way the child learns about the world; and, two, that the accessory muscles which control the use of the fingers and hands are still far from complete in their growth. Skill in the use of arms and legs and trunk comes before skill in the use of the fingers and hands, because the large muscles involved in the former are in working order before the small or accessory muscles.

For example, children can carry an armful of things before they can carry a handful; they can go up- and downstairs before they can feed themselves; they can put their legs and arms into their clothing before they can manipulate buttons or hooks. That is, the preschool-age child is more capable of directing his body as a whole to do what he wants it to do than of making his hands do so. Therefore, the degree of his skill, speed, and accuracy in manual activities cannot be expected to equal that of his locomotor activities during the preschool years.

Even watching a group of two-year-olds for a short time will furnish you with several illustrations of the way they use their hands. John is at the table cautiously turning the pages of a picture book; George looks on, clutching a small automobile in his hand. Susan struggles to unbutton the one large button on the doll's dress. With a pair of blunt scissors, Jane barely succeeds in making a tear in the paper she is trying to cut. In the bathroom, Francis pursues the soap as it slips about in the soap dish, while next to him Patty valiantly uses both hands to turn off the faucet. Their motions are awkward, clumsy, and uncertain. They put their whole bodies into the activities, screwing up their faces and in other ways showing that these simple daily tasks are an effort for them. For the two-year-old, any use of his hands is difficult, and guidance consists in helping him to develop skill by doing these things for himself, at his own pace, without hurry, without scolding or calling attention to failures but with encouragement for each step well done.

The child who is almost five is much more adept with his hands, even though his small muscles are still far from being fully developed. Study the activities of a four-year-old group, and note illustrations of this progress. Julia buttons the last button on her smock with justifiable pride; Dorothy combs her hair quite respectably at the mirror; Mary and Sally mold clay into crude imitations of dogs, fish, and other animals. Barbara hammers a nail into the headboard of the bed that she is making; and Joan saws as best she can along a straight line marked on a board. The manual activities of the four-year-old are not only carried on with less effort, but they are also more complicated than those which the two-year-old enjoys.

The principles are the same for both ages. Provide objects large enough to be grasped easily by small hands. Tiny objects, such as beads, buttons, or dollhouse furniture are hard for preschool children to hold. Have as few breakable things around as possible in order to avoid the tragedies of ruined treasures. And allow children to leave some manual tasks unfinished and to put away their work when they lose interest in it. Muscles may be tired, and only discouragement can result from keeping them at work beyond the fatigue point.

When you are watching the preschool child's use of his hands, note especially the following: the degree of ease with which a child grasps and releases objects; the length of time he voluntarily holds different objects; and the extent to which he uses both hands or limits himself to either the right or the left hand. The information you gain from these observations is not the only significant thing in determining each child's stage of development, but it does show the extent of his muscular growth and point the way to guiding him in using his hands.

Many people are concerned about whether or not a child is to be left-handed; they want to know as early as possible so that they can "do something about it." So far no test has been devised that will predict this with certainty, and many a preschool child uses both hands interchangeably.[1] The best procedure for guiding a child is to let him use the hand he wants to use when he wants to use it. At the same time, note which hand he uses for what, and help him become proficient with this hand whichever it may be.

EATING, SLEEPING, AND ELIMINATION

Small babies just eat, sleep, and eliminate as nature dictates without being bothered by the social conventions, such as table manners, bedroom privacy, and bathrooms. By five years of age, however, the child has taken on practically adult patterns with respect to these three habits. He can feed himself, put himself to bed, and take care of himself at the toilet. Somewhere in the years two, three, and four, the inner growth of nerves, muscles, and bones and the influence of the environment have brought about the establishment of the so-called "fundamental habits" of eating, sleeping, and elimination.

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[1] SCHEIDEMANN, NORMA V., *The Psychology of Exceptional Children*, pp. 130–180, Houghton Mifflin Company, 1931.

Let us consider each of these habits separately and compare the characteristic behavior of two-year-olds with that of four-year-olds.

Eating

The term "eating behavior" covers more than putting food into one's mouth. Certain things are desirable at any age. To be hungry and anxious to go to a meal, to taste new foods, to have few if any real food dislikes, to feed oneself, to be in a pleasant mood while eating—these are factors essential for the proper nutrition and assimilation of food.

What eating behavior, then, should one expect of two-year-olds? Certainly all of the foregoing with some reservations and limitations. A healthy two-year-old will come to the table hungry if he hasn't been fed between meals and if the food at his last meal was properly selected. Clumsily and with considerable spilling, he will try to feed himself, holding his tools in bizarre fashion. In the middle of a meal, he will tire from the effort and may need help to get all the food he wants. Certain foods will need to be specially prepared for him, chopped fine or puréed because his few teeth (sixteen to twenty at this age) do not enable him to chew things thoroughly, and his intestinal tract is easily irritated.

Even at this age he will have a few preferences for certain foods and dislikes of others, neither of which should be taken too seriously in general. Offering a wide variety of foods and encouraging a child to take just a taste of disliked foods will eventually result in a balanced diet. The days of forcing a child to eat everything on his plate are long since past. We now put the food before him in attractive small servings, hope for the best, and call it a meal when he says he is through. Weight and height gains are a better indication of whether a child is getting enough food than the amount of uneaten food he leaves on his plate.

Two-year-olds will probably have no table manners. Just to sit still and use their hands to get the food to their mouths is a strain on them. They will wiggle in their chairs and undoubtedly shuffle their feet; they may even get up and run around. For the most part, the meal will proceed in silence because two-year-olds are not yet fluent conversationalists, and they can't attend to eating and talking at the same time. A two-year-old may need to be reminded to keep his other hand in his lap (an indirect way of suggesting that he keep his fingers out of the food), to watch what he is doing, to take both hands to lift his glass of milk, but only a very few suggestions should be given as the meal progresses. At the end, he can push in his chair and hang up his bib with a feeling of satisfaction.

In contrast, four-year-olds sit more quietly at the table throughout the meal, managing their utensils and carrying on a conversation at the same time. They spill little and are proud to have napkins in their laps in place of the bibs they needed as two-year-olds. They, too, have preferences and dislikes and will leave food on their plates occasionally. But reminders are less frequent, and the whole meal proceeds more smoothly in a quite grown-up manner.

To illustrate these differences, make a few notes of what a two-year-old says at the table during a meal and a similar record of what a four-year-old says. Watch the way the younger child holds his spoon, his fork, his glass, and compare with the way the four-year-old does the same things.

Note the food likes and dislikes of the two ages, and try to find reasons for them. Look at the amount of food left on the plates and the number of second helpings served, and see what relation they bear to the size of the first helping. Keep count of the wiggles or shuffling or other indications of restlessness made by each age, and see what relation they seem to have to (1) the arrangement of the table and chair, (2) the food, (3) the length of the meal, (4) the waits between courses, and (5) the behavior of the adult in charge.

Other points about eating behavior will undoubtedly occur to you as you are watching the children, and you will find it interesting to follow up some of them with more intensive study. Special analysis of a child who has gained a reputation for being an "eating problem" or a study of children's preferences for certain foods or ways of cooking them will reveal the different aspects of the comparatively simple process of eating and the influences that affect eating behavior during the preschool years.

Sleeping

Sleeping is the second fundamental habit on the list, and to the uninitiated this seems far too organic and simple to be called a "habit." But although the basis for sleeping behavior is found in the physiological urge to rest when fatigued, such considerations as willingness to accept sleep, position taken when falling asleep, time of going to bed at night and of waking in the morning may become habits at an early age and may affect the quantity and quality of one's sleep.

As in the case of eating behavior, there are certain points about sleep that are desirable for any age, even adulthood, if the body is to maintain a proper balance of rest and nutrition. It has been customary to state these in terms of hours of sleep out of the twenty-four, but this does not tell the whole story and is often misleading.[1] In the first place, our scientific knowledge of the amount and kind of sleep needed each day by children of different ages is very limited. The effect of such things as exercise, food, season of the year, temperature, and clothing on sleep is too little known to justify a dogmatic statement that any child of a certain age should sleep so many hours out of twenty-four. So, as in the case of height and weight, it is best not to take the standard charts for children's sleep too seriously. Far better to concentrate on attitudes toward sleep and provision for adequate rest. It is the author's belief that under proper conditions and over a period of weeks, the amount of sleep will adjust itself to the individual needs of the children.

The minimum standards for good habits of sleeping should include a willingness to lie down (even when one does not "feel tired"), to remain quietly in bed for a desirable length of time, and to accept (not fight) sleep. This all sounds very simple; but under the nervous tension of our life today, there are few people who approach sleep this way. Attention then must be directed to building up in children proper sleeping habits which will be of benefit all the rest of their lives.

What do we expect of a two-year-old in the way of sleeping behavior? Certainly he *can* do all of the things mentioned above but with certain modifications and limitations. He can lie down, stay in bed, and accept sleep. But he must not be expected to lie too quietly. He will wiggle and twist and move his hands and feet, a continuation of the activity of his waking hours. Eventually, he does fall asleep, although it sometimes seems to take an unnecessarily long time for him to do so.

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[1] Reynolds, M. M., and H. Mallay, The Sleep of Young Children, *Journal of Genetic Psychology*, 43: 322–351, 1933.

In addition to the minimum standards given above, we can expect a two-year-old to climb in and out of bed with help, to sleep in any place in a bed or a crib that has protected sides so that he cannot roll out, and to take a nap practically every afternoon.

The limitations are that he will most certainly be wet sometimes during the night, that he will wake up far too early in the morning for the comfort of the adults responsible for him, and that he will probably get out of bed. Bothersome as these things are to adults, they will not last forever and with patience and consistent teaching will be but passing phases of development.

The differences in sleeping behavior between the two-year-old and the four-year-old are not so great as the differences in eating behavior, but a study of each of these ages will show how much more independent the older child is in getting into bed by himself, how much less he wiggles once he is there, how seldom he is wet, and how infrequently he falls asleep at the afternoon rest period.

It is harder to study the sleeping behavior of children than their eating behavior, because visitors upset the situation and cause a child to behave in unnatural ways. But if you have a chance to observe a preschool child in his home during supper and the bedtime routine, you will find some interesting things to watch. For instance, is the child quiet and calm before getting into bed? Excited and hilarious? What causes are apparent? What efforts does he make to put off bedtime? Why? How successful is he? How long is it from the time he gets into bed until he is actually asleep? What does he do when left to himself? Sing? Call out? Lie quietly? Get out of bed?

Observe the nap period in a nursery school, and notice how softly the teachers talk and move, how gently they tuck each child in bed, and the other things they do to help the children approach sleep with the right attitude. Compare the sleeping behavior of different children. It is desirable to watch children at bed and nap time enough to understand the different phases of sleeping behavior and the importance of the fundamental habit of sleep in the preschool years.

Specific guidance for forming good sleeping habits in the preschool years consists in planning a day with a balance of exercise, food, and rest. Overexcitement should be avoided in so far as possible, and provision should be made for more hours of rest than the child usually sleeps. Add to this comfortable sleeping arrangements and an attitude of welcoming rest and sleep. These are the essentials of good sleep behavior. We can do no more than lead the child to rest; he cannot be made to sleep. Fortunately nature will do that when we do our part properly.

Elimination

The third fundamental habit, elimination, is more complex than either eating or sleeping because of the social taboos surrounding it in our civilization. As he grows up, a child is no longer permitted to urinate and defecate at will as he did when he wore diapers. He must learn to go to the bathroom, a bothersome process at best.

Bowel control is established earlier and more easily than bladder control. Bowel movements occur with greater regularity and less frequency than urination; and by the age of two, most children make their wants known somehow when they need to have a bowel movement.

This is not true of bladder control. At two, very few children are dry during the day, and even fewer are dry at night. Wet pants and wet beds are to be expected, especially during periods of excitement.

Some mothers boast that their children were "perfectly trained" at a very early age, and one wonders at what expense to the dispositions of both parents and children. It takes more than teaching to enable a child to tell when he needs to go to the toilet. Nerves, muscles, and brain connections must have developed to the point where control is possible. The process of training is accomplished most easily if begun at the psychological moment when the organism has developed sufficiently to learn readily. Beginning too early is as much a mistake as beginning too late.

For two-year-olds, the responsibility for seeing that the child gets to the toilet in time is still largely the adult's, although most children will tell occasionally when they need to go.

Not only is a two-year-old child dependent on adults to a greater or lesser degree to get him to the toilet in time, but he needs help to manage himself once he gets there. Buttons must be buttoned and unbuttoned for both boys and girls; dresses must be held for the little girls, and panties for the little boys. Each step of the bathroom procedure, flushing the toilet, washing the hands, etc., may need to be suggested by the adult in charge.

The outstanding characteristics of the two-year-old's habits of elimination are unreliability and dependence on adults, in contrast to the reliability and independence of the four- (almost five-) year-old. The older child still has occasional toilet accidents at times of overexcitement, but these are the exception. He usually trots off to the bathroom when he needs to go, unbuttons his clothes and buttons them up again (if the fastenings aren't too small or too intricate), flushes the toilet, washes his hands (if he has been taught to do these things as a part of the toilet procedure), and returns to his play in short order. His behavior is adequately described in the phrase used in nursery schools: "He takes full responsibility for his toilet needs."

It would be interesting to compare some two-year-olds and some four-year-olds during a morning play period for such things as frequency of needing to go to the bathroom, ways they make their wants known, and independence at the toilet. A talk with individual mothers about methods of training, what is done when accidents occur, and points considered specially important would provide valuable material to supplement your observations.

The fundamental habits of eating, sleeping, and elimination figure largely in the literature about the preschool child, and it is easy to understand why this is so. They are important to future physical and mental well-being, and the age from two to five is the time when they can be easily formed or corrected. What more natural than that parents, child guidance clinics, and nursery schools should all devote considerable attention to them. It would be too bad if the educational plan for young children stopped there, however. The world is full of so many interesting things that children should know about and do. The real purpose of the fundamental habits is to develop a body so healthy and so automatic that the individual is equipped and free to explore these fascinating possibilities.

LANGUAGE DEVELOPMENT

A great many studies have been made of the language development of young children, of the words in their vocabulary at different ages, the parts of speech, and the types of sentences they use. Three points seem to be pretty well established from the results of these researches: (1) that girls are more advanced than boys in speech at all ages,[1] (2) that children of the same age differ widely in their ability,[2] and (3) that environmental influences affect speech development to a considerable extent.[3] Such things as the background of experiences a child has had, the places to which he has been, the things he knows about, the speech he hears at home, and the solicitude with which adults anticipate his wants all play a part in helping or hindering his mastery of speech.

During the years two, three, and four, children are learning to use speech as a means of communication, as a tool to make their wants known. In the process of adding new words to his vocabulary and of learning the complicated ways of putting sentences together, a child will most certainly make mistakes of pronunciation, word usage, and grammatical construction. His tool of communication will be crude, but it should be judged by the extent to which it meets his needs rather than by the standards of the dictionary or correct social usage. Some "baby talk" may hang over from infant days; some "bad language" will invariably creep in; but in the last analysis, the speech of the preschool child is neither "cute" nor "terrible"; it is his still imperfect tool for making himself understood.

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[1] WELLMAN, BETH L., Sex Differences, in *Handbook of Child Psychology*, ed. by Carl Murchison, p. 631, 2d ed. rev., Clark University Press, 1933.

[2] STODDARD, GEORGE D., and BETH L. WELLMAN, *Child Psychology*, p. 100, The Macmillan Company, 1934.

[3] JOHNSON, BUFORD, *Child Psychology*, p. 205, Charles C. Thomas, Springfield, Ill., 1932.

What can be expected of two-year-olds, and how does it differ from the speech that the four-year-olds use?

Even two-year-olds differ widely in their language development, as the following examples show. Mary talks very little. You don't hear her say a word in the two hours that you observe her in her home. John's best sentence is "Johnnie truck" pronounced in babyish fashion; Robert seems quite advanced with his "Miss Reynolds, can I get my things now?" whereas Doris tells a story about the "Kitty at my house; a gray kitty; her eyes aren't open yet, but she's all soft, and she purrs."

Chronological age accounts for the fact that Doris, who is almost three, talks more and better than Mary, who is just two. There is almost a year's difference in their ages. But age is not the only explanation of the varying language abilities. The inner growth of bones, muscles, and nerves; the speech the child hears at home; and his need to express his wants in words all play their part in language development.

In a group of four-year-olds, the wide differences in language ability will also be apparent. It would be unusual to find a child who didn't say a word at that age, but some four-year-old children talk in short, incomplete sentences with enunciation hardly understandable, whereas others converse in grownup fashion. And the causes of these differences are as complicated at this age as they are earlier.

Certain characteristics of the language development of preschool children should not be taken too seriously. Repetition is typical. Not only will youngsters repeat with maddening persistency such phrases as "dingdong, dingdong," but one will hear over and over again questionable words like "You old pooh-pooh." It matters not to the child *what* he repeats. Repetition is one of his ways of perfecting his speech, and he seems to enjoy the very music of the words, even while their meaning escapes him. If the repetition is allowed to run its course without undue interest on the part of adults, it will change to new phrases often enough to keep peace in the family.

The child, then, is playing with words at this stage of his development, and some words are fun for their sound and rhythm as well as for the story that they tell. It is hard for adults to know when to explain the meaning of a word that seems to us essential to the understanding and when to let it go by on the strength of the music that is in it. The best guide is provided by the children themselves. When they ask "What's that?" it is time to explain; but until they do, let it go. If the word is over their heads, it is probable that our explanation will be also, but the children may still enjoy the word for itself.

Remember, too, that during the preschool years, speech is not yet completely under the control of the children. A child literally cannot "tell us about what happened at school this morning"—first because he may not remember that far back, and second because he cannot yet put his thoughts into adequate words at will. Later something may remind him of an incident, and he may spontaneously pour forth a tale, but it is still not a part of his repertoire to "tell what he had for dinner" or "where he went this morning" or "what he did at the party." When pressed, he will either say the first thing that comes into his head, which may or may not be true, or he will give us the answer we want. To the question, “Did you take a nap today?” or “Were you a good girl?” the answer “Yes” comes automatically without understanding and often without basis in actual fact. The child is not lying; he is not even shading the truth to make things run smoothly, as we adults so often do. He really doesn’t know; but even if he does know, he probably can’t put it into words in any more satisfactory fashion. No doubt adults ask questions because they don’t like silences and because they can’t think of any other openings, but children don’t mind silences and prefer to make their own openings, so we might well bide our time and take our cues from them. If we really want to find out what happened, better to see for ourselves or to ask the teachers or nurses. The reports given by preschool children are notoriously unreliable.

The language development during the years from two to five largely concerns itself with perfecting a tool for social communication by experimenting with words, phrases, and sentences and learning how to satisfy wants by means of using words in place of gestures, pushes, and punches. Children need to hear good speech, to be encouraged to copy it, and to experiment with its effects on other children and grownups.

GETTING ALONG WITH CHILDREN

Babies have a limited social acquaintance. Parents, nurses, doctors, brothers, and sisters make up the social circle of most children until they reach preschool age. About that time, parents begin to look around for opportunities for Johnnie to play with other children. Neighborhood play schools are organized, many of them with mothers as teachers; preschool groups are added to already existing private schools, largely in an effort to give preschool youngsters a chance to learn the give and take of group contacts. After being lord of all creation in a home filled with adults, it is wholesome to test oneself in the outside world against one's peers.

At two years of age, most children are ready to profit by spending a few hours a day with other two- or three-year-olds, preferably under the supervision of a trained person. The group should not be too large or the age range too wide, and it cannot safely be left to its own devices too long. But in a properly supervised group, preschool children can learn much about ways of getting along with people their own age.

A great deal of scientific work has been done on the social development of young children, and more is in progress. The subject is of interest to us all because young children illustrate the social behavior of human beings in the rough. The more we understand it the more intelligently can we deal with the polished diamond stage of social relations, as found in international conferences, socialist-labor disputes, and political rivalries.

Watch some two-year-olds at play, and compare them with four-year-olds. The growth that has taken place in these two years will be easy to see.

Two-year-olds play by themselves for the most part, conscious of the presence of other children, but they make only momentary, fleeting contacts with one or two other children at a time. A typical scene of two-year-olds on the same playground shows Mary and Jane on opposite sides of the sandbox, each playing with sand but in no sense playing together; Peggy, Bob, and Barbara on the slide, jostling each other in their efforts to get up the steps and slide down again as fast as possible; and Jack, the "lone wolf," pedaling around on the pedal car, stopping every once in a while to watch the other children. In the grownup sense of the word, two-year-olds do not "play nicely together"; they do not yet know how. They like to be near each other and to play with the same things, but their actual contacts with one another can hardly be called playing together. They touch each other, hand over or take a toy, and then each goes about his own business. They exchange smiles and glances and conversation, but they come together, two or three of them at a time, for very brief periods.

Compare this with the way four-year-olds play together, six or seven for fifteen minutes or more at a time, cooperating on building or dramatic play. A typical scene with four-year-olds would show James and Freddie and Sue and Mary and Jane in the midst of a pile of boxes, playing train. Freddie is the conductor, calling out stations in a lusty voice; Sue gets off frequently and runs around to another box; James tries to work out something about tickets, but the idea isn't clear in his mind—he just gets in everybody's way and is told by the others to "sit down, train's going." Mary and Jane sit quietly giggling together. Each child takes a part, crudely perhaps but with some appreciation of the give and take involved in playing together. Not all the youngsters follow the play through from start to finish; one wanders off to slide, another to ride a bike. Two who are playing in the sand do not join the train play at all.

Any group of four-year-olds when left to themselves will provide other examples; and if you can watch the same youngsters over a period of several days, you will undoubtedly see the play change its main theme. You will notice that some members desert the group and that other new members are added to it. But the fact remains that the number of children who can play together is substantially larger and the play more grownup than is possible with two-year-olds.

Apparently the age and social development of the children bear a direct relationship to the number who can play or work together satisfactorily. Trouble develops if there are too many children and their social techniques are too crude. After all, getting along with people is a complicated process. Among other things, it involves an understanding of the rights and feelings of others as well as of oneself, considerable self-control in waiting one's turn, and a technique for accepting and advancing ideas. Small wonder that the young child with his meager language and limited experience is not proficient at the game, even when dealing with other children his own age.

How much this is due to training and how much to inner growth of muscles and brain and nerve connections we do not know, but undoubtedly each contributes its share. It would be of no use to try to make year-old babies play nicely together; they are not sufficiently developed to learn this from even the most skillful teacher, and, on the other hand, maturation alone will not accomplish it. It takes the right teaching and the inner readiness to profit by it, a golden combination of these two to develop the ability to make satisfying social relations with one's fellow men.

GETTING ALONG WITH ADULTS

From the wealth of material available on the subject of parent-child and teacher-child relationships, two points, *negativism* and *independence*, have been selected for discussion

These children climbed up of their own accord and are now resting after a period of strenuous play. (*Courtesy of the Institute of Euthenics, Vassar College. Photograph by Margaret DeM. Brown.*)

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here, largely because they come as surprises to most people and because they are potential sources of difficulty in handling the preschool child.

Negativism is the name given to that annoying little habit of saying "no" to everything or in other ways indicating resistance to doing what is wanted. Frankie stands his ground firmly and won't wash his hands, eat his dinner, get undressed, "or anything" without a struggle, whereas Joan coyly runs away when she senses that the adult in charge needs her cooperation. Each child is saying no in his own way, quite the expected thing at the ages of two, three, and four—and hopeful for this very reason.[1] Before he is five, he will have developed more acceptable ways of getting along with adults. He will say, "I will in a minute" or "Can't I do it this way?" Or he'll just plain do it. The important point is that he won't go on refusing, and we need not worry that a child who shows resistance at the preschool age will develop into an unpleasantly determined adult.

The *independence* that young children can and will show under proper guidance is often a source of amazement to grownups. To watch two-year-old Jimmie when he arrives at nursery school in the morning take leave of his parents without even so much as a backward look, trot off by himself, greet his companions, and settle down to work with some material of his own selection, all this without a word from an adult, is a liberal education to most of us. Or follow Mary, a mature four-year-old, as she comes in from the playground at a suggestion from the teacher, takes off her wraps, and goes to the bathroom where she uses the toilet, washes her face and hands, and even combs her hair, practically on her own. Both these children have developed this independence by slow stages in their year of nursery school experience. One must not expect such independence even of five-year-olds unless there has been opportunity for the child to learn the series of steps over a period of time. The important point is that preschool children can be more independent than most of us give them credit for. They do not need to be picked up or held by the hand as often as we would like to do it, but they do need to have freedom to stand on their own in an environment planned for them by adults who are on hand when help is needed.

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[1] Reynolds, Martha May, *Negativism of Preschool Children*, Bureau of Publications, Teachers College, 1928.

APPRECIATION OF NUMBER AND TIME

To grownups who have learned to talk (if not to think) in dollars and to regulate their lives by the clock and the calendar, it seems incredible that small children have only a vague sense of number and time and, furthermore, that they use words indicating them without appreciating their real meaning.

Number

John says I've got "a hundred" when he really has only ten; Barbara counts "one, two, three, five, eight," not even pointing to the objects in order as she does so. Probably everyone knows a child who has been taught to count from one to ten at an early age as a parlor trick, long before he can count as many objects or even match their numbers. Most people don't know, however, that according to the revised Stanford-Binet test of intelligence, children are not

Even small children can cooperate with the doctors during physical examinations. (*Courtesy of the Institute of Euthenics, Vassar College, Photograph by Margaret DeM. Brown.*)

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expected to count four objects until they are five or to pick up five, seven, or nine blocks until they are six.[1] Real understanding and use of numbers comes slowly, and very little should be expected at the preschool years.

Most children of three or four distinguish between one, two, and "a lot of." They know that some things come in pairs, like feet and shoes, and use the expression "the other one" to show that they realize that one is not enough. Words like "pair," "dozen," "twenty," "fifty" have little or no meaning for them.

Few studies have been made of the preschool child's understanding of and use of number words, and you will find it quite interesting, when you are watching children of this age, to note everything they do or say that implies an understanding of number. For example, Jane says to Ruth, "You can have six more times round, and then it's my turn"; but when the teacher starts to count, she asks at the end of three, "Isn't it six yet?" showing that six to her was just any number. Similar illustrations will be found in every group of children if one has the patience to wait for them. But you may have to wait quite a long while, because numbers aren't used very often by preschool children, and there may be days when no illustration at all will be forthcoming.

Time

The time sense of two-, three-, and four-year-olds is also rudimentary. A child first distinguishes time intervals by the events in his day like coming to school, meals, and nap. To him, this afternoon means either "after dinner" or

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[1] TERMAN, LEWIS M., and MAUD A. MERRILL, *Measuring Intelligence*, pp. 93, 96, Houghton Mifflin Company, 1937.

"before supper," and tomorrow can best be indicated to him by "when you wake in the morning." He cannot look very far ahead or back in time. "Next week" probably means just an event to come, whereas "last week" means that it has gone by. Jack says, "We went to Grandma's yesterday," when in reality it was weeks ago; Susan, "I go to school tomorrow," when it will be two weeks or more before school opens again after vacation.

Days of the week, months of the year, and years have no meaning for young children. Children may use the terms when they have heard adults use them but without real understanding of the time concept.

Four-year-old Julia, whose birthday is two months past, says "My birthday is next month, and then I'll be five." Three-year-old John, who knows that he does not go to school on Saturday, asks his mother on Wednesday morning, "Is it Saturday today?"

It is best, therefore, not to expect too much in the way of appreciation of time and not to accept the child's use of time words at their value.

Very few adults realize the limitations of children's time sense at the preschool age, and you will find it interesting to keep a record of the time expressions you hear adults use when talking to young children and the responses that the children make showing bewilderment or understanding.

OBSERVATIONS

It is to be hoped that you can spend several hours observing children of preschool age. There is much that you can gain from a study of this age that will be helpful to you in understanding older children; adults; and, last but by no means least, your own behavior.

There are other interesting things to study about these children besides those mentioned in this chapter—their music and art interests and skills; their ability to put two and two together, which we call "reasoning"; and their uncanny ways of remembering insignificant places and events long past, for instance.

SUMMARY: PRESCHOOL AGE

Two-, three-, and four-year-olds are active little beings, quite a job to take care of unless special provision is made for them. They are old enough to get over the ground very fast by themselves yet not old enough to be trusted to stay within bounds. They are old enough to investigate things by themselves but not old enough to single out the things worth while and safe to investigate. It is a time when foundations of good health are being laid, when habits can be formed and broken comparatively easily, when horizons are being widened to include more than the home. Children of preschool age need an environment specially prepared for them and almost constant supervision and guidance. Nursery schools and play groups grew up primarily to help mothers provide the education that these children should have if they are to slip easily into the next and successive stages of childhood.

REFERENCES

LIST I

ANDERSON, JOHN: *Happy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter V. The Control of Basic Habits. pp. 49–68.

BAILEY, EDNA W., ANITA D. LATON, and ELIZABETH L. BISHOP: *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933.
Chapter IV. Outline for Study of Child in Preschool. pp. 26–70.

BAIN, WINIFRED E.: *Parents Look at Modern Education*, D. Appleton-Century Company, Inc., 1935.
Chapter II. Will You Send Your Child to a Nursery School? pp. 6–32.

KENYON, JOSEPHINE H.: *Healthy Babies Are Happy Babies*, Little, Brown & Company, 1934.
Chapter XV. Two Years. pp. 223–235.
Chapter XVI. Two and a Half Years. pp. 236–242
Chapter XVII. Three Years. pp. 243–276.

LANGDON, GRACE: *Home Guidance for Young Children*, John Day Company, Inc., 1931.
Chapter III. Eating. pp. 97–149.
Chapter IV. Sleeping. pp. 150–193.
Chapter V. Toileting. pp. 194–230.
Chapter VI. Play. pp. 231–290.
Chapter VII. Learning to Live with Other People. pp. 293–349.

MORGAN, JOHN J. B.: *Child Psychology*, Farrar & Rinehart, Inc., rev. ed. 1934.
Chapter IV. Motor Development. pp. 104–143.
Chapter VII. Development of Meanings. pp. 215–238.

STRANG, RUTH: *An Introduction to Child Study*, The Macmillan Company, rev. ed. 1938.
Chapter IX. Development during the Later Preschool Period. pp. 153–198.
Chapter X. How Preschool Children Learn. pp. 199–234.

Chapter XI. Special Problems of the Later Preschool Period. pp. 235–251.
Chapter XII. Suggestive Family Schedule. pp. 252–263.
Chapter XIII. Study and Guidance of Preschool Children. pp. 264–285.

STUART, HAROLD C.: *Healthy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter VIII. Regulation of Feeding. pp. 191–197.
Chapter X. Balanced Rest and Activity. pp. 216–237.

LIST II

ANDRUS, RUTH, and associates: *Curriculum Guides for Teachers of Children from Two to Six Years of Age*, John Day Company, Inc., in association with Reynal & Hitchcock, 1936.

BAKER, CLARA BELLE, director of the Children's School, and other members of the staff: *Curriculum Records of the Children's School*, Bureau of Publications, National College of Education, 1932.
Part III. The Day's Procedure:
  Arranging the Program. pp. 249–261.
  Sketches of Various Days. pp. 262–288.

FISHER, DOROTHY CANFIELD, and SIDONIE MATSNER GRUENBERG, ed.: *Our Children*, Viking Press, Inc., 1932.
Chapter VIII. Psychological Factors in Habit Formation. pp. 83–91.
Chapter IX. Laws to Be Broken—Some Problems in the "Habit Training" of Young Children. pp. 92–102.
Chapter X. The Contribution of the Nursery School to the Home. pp. 103–110.

GOODENOUGH, FLORENCE L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.
Chapter XII. Early Childhood. pp. 242–274.

Chapter XIII. The Social and Emotional Behavior of Young Children. pp. 275–292.

RAND, WINIFRED, MARY E. SWEENY, and E. LEE VINCENT: *Growth and Development of the Young Child*, W. B. Saunders Company, 1934.
Chapter V. Growth during the First Period of Early Childhood. pp. 134–192.
Chapter VI. Growth during the Later Period of Early Childhood. pp. 193–246.

STRAIN, FRANCES: *New Patterns in Sex Teaching*, D. Appleton-Century Company, Inc., 1934.
Chapter VI. First Questions of Young Children. pp. 93–113.
Chapter VII. A Few Rules of the Game. pp. 114–132.

ZACHRY, CAROLINE B.: *Personality Adjustments of School Children*, Charles Scribner's Sons, 1929.
Chapter IV. The Over-dependent Child. pp. 184–212.

5 . . . Early Childhood

FIVE-, SIX-, AND SEVEN-YEAR-OLDS

THE first day at school! What a wealth of meaning in that phrase. Whether it marks the first separation from home and mother or merely a continuation of nursery school, it is a milestone in the life of every youngster. Long years of school days lie ahead—long days of confinement within the four walls of a school building, a seemingly endless procession of teachers, and countless examinations. All these confront him before he will be free of its daily grind, ready for college or looking for a job. Family life, too, will be dominated by the days and hours when school opens or closes. In many ways, school entrance is a milestone in the life of the family as well as in the life of the child. For the majority of American children, school entrance falls in the upper half of the age group that we have called "Early Childhood." Kindergarten at five, first grade at six, and second grade at seven is the usual procedure.

SOURCES OF INFORMATION

There are not so many books about five-, six-, and seven-year-olds as there are about babies and younger children.

Do not be discouraged if you fail to find a book that gives a general summary of their all-round development, as you did for the preschool child. The literature offers several books on the psychology and education of this age, but enough scientific data have not yet accumulated to enable anyone to write an exhaustive summary of the characteristics of this age, taken by itself. The research being done on the ages of Early Childhood is not so spectacular as that on preschool and adolescent youngsters done by the large university centers. But the results of studies made by teachers, doctors, and organizations interested in children of this age make a significant contribution, nonetheless, to our understanding of five-, six-, and seven-year-olds.

There are still gaps in our knowledge of this age, and even many of the things that we think we know have not been scientifically established. More than ever when you are studying children of this age, you will need to observe real live children, several of them, under different circumstances to find out what children of five, six, and seven are like.

OBSERVATION SUGGESTIONS

The easiest place to observe these children is in school. There you can find as many as thirty of them together for hours at a time, which was not possible with the younger children. Be sure to see all kinds of children and representative samples of their activities. Do not confine yourself to observing children in one school situation. Find them in the cafeteria, at play, at home, and other places in order to piece together a well-rounded picture of the characteristics of early childhood. Make the most of the opportunities that are so close at hand that they often go unnoticed, like the chance to stay with a young cousin while her parents are away, to take the cook's seven-year-old to the circus, or to read to your little brother. You will find it helpful to take notes and analyze them as suggested in Appendix II (page 291).

CHRONOLOGICAL AGE

Children in these early grades are more nearly alike in chronological age than children in the upper grades. There is seldom more than a year's difference in their ages, because parents usually enter them in school at the earliest age that the local regulations permit. A child who is four years nine months at the opening of school may enter first grade. The rules vary in different communities but in a way to narrow the age limits rather than to widen them. This means that practically all the children you see in a kindergarten are between the ages of four years nine months and five years nine months at the beginning of the school year and that the difference in the ages of the youngest and the oldest at any time during the year is just about twelve months.

Most schools group the children into grades and promote them on the basis of work "satisfactorily completed." Children who fail in two or more subjects are "left back" and must repeat the grade. Occasionally, others whose marks are particularly good are skipped a half grade or so. This system is based on the assumption that all children should complete the same amount of work in all subjects in the same length of time, a false premise in the light of what we know about individual differences. Recently there has been growing dissatisfaction with this method of grading—in fact with the use of numbered grades at all. Attempts have been made to find a sounder basis for classifying children, and chronological age is the most widely accepted at this time. "The sixes" or the "six-year-group" take the place of "Grade I." The "nines" or "tens" replace grades IV and V. Some schools use the teacher's name as the title of the group—"Miss. G's group" or "Mrs. J's group." There is not space here to go into the advantages and disadvantages of the various systems of classification. They are mentioned here to prepare you for the different types you may find in the schools in which you observe and to familiarize you with the trends in educational procedure with respect to grading.

Even in the most conventional schools, it is not the practice to have children repeat or skip the early grades, so most children move smoothly along through kindergarten at five, first grade at six, and second grade at seven. Be sure to observe in all these grades and to include all groups in which children of these ages are to be found if some other form of classification is used.

INDIVIDUAL DIFFERENCES

Chronological age is about the only way in which children in these early grades are alike. That will soon be apparent to you in your observations. They differ in every other respect that we can think of. One is tall, another short; some are talkative, some silent; one is pale, another pink-cheeked; one is a leader, one a follower. Each child is a distinct personality, different from all the others. It is harder to find characteristics these children have in common than it was with the babies or preschool children. The older children have more complex ways of behaving, more ways in which they can differ. They have lived longer and been subjected to more influences intensifying these differences. Remember that each child has a unique heredity which develops in a unique environment. Even for brothers and sisters, environment is never the same for any two children. No wonder, then, that five-, six-, and seven-year-olds show more individual differences than the younger children. In our study of this age group, we shall have to search diligently for the ways in which these children are alike. For our present purpose, the likenesses are more important than the differences. For the welfare of each child's personality, the opposite is true.

PHYSICAL GROWTH

Physical condition is important at any age, but early childhood is a time to give special attention to it. Even at its best, school is a strain, and each child should be in good health, well nourished, and free from remediable defects before entering.

The first question that concerns us in our study of five-, six-, and seven-year-olds is how this age group differs from the preschool and from that of older children with respect to physical growth and health problems.

In your observations, you will notice that the children are a little taller and a little lankier than their younger brothers and sisters. However, they haven't outgrown their clothes as eleven- and twelve-year-olds do. An annual growth of 2 or 3 inches and a weight gain of 3 to 6 pounds is expected of five-, six-, and seven-year-olds, but there are wide variations, each with its own individual significance. Some children gain more, some less. Some grow more, some less. Neither gains nor losses taken alone can be regarded as indications of a child's health status. The important thing is not the amount but the relation that it bears to general growth and health. Large gains may be due to improper functioning of the glands of internal secretion; insignificant gains may accompany a gain in some other phase of development; and losses may be traceable to poor nutrition or a temporary acute illness. No one can tell without knowing more about the child and his background than just his height and weight today. Too many factors are involved. Such things as age, amount of fat, recent health history, previous gains in height and weight, dietary changes, and family type must all be taken into account in interpreting the results. Gone are the days when we weighed and measured a child, compared the results with the height-weight tables, and sent a note home to his family telling them that he was "just right," "overweight," or "underweight." We still weigh and measure the children at intervals each year; but instead of sending home cards, we study the results in the light of what we know about each child and his family background and single out for special attention those children who are not gaining properly. It is especially important to do this in the early years of childhood before the effects of ill-health have become permanent.

As you look about the kindergarten and first and second grade rooms, compare the children for height and weight. Which are the tallest, which the shortest? Which fat, which skinny? See how closely your observations agree with the records, if they are available to you. If they aren't, perhaps the teacher will tell you which children she considers in need of special attention. Be on the lookout for children who are older than the usual age for the grade. Occasionally you find them; and in that case, you would expect them to be larger than the other children. And don't judge nutritional status by round cheeks and fat legs exclusively. Clothes hide skinny ribs and fat pads on the hips. It is often a surprise when the child you assumed to be in good condition turns out to be very much underweight or the child you thought skinny is discovered to be just right. Although observation is not the best way to measure growth, it is a good idea to learn to pick out from any group the children who differ a great deal from the accepted averages and to be alert to the significance of height and weight as an indication of growth and health.

GENERAL HEALTH

Height and weight are not the only indications of health. There are other things you can observe, like color of cheeks, sturdiness of legs, brightness of eyes, general posture, and vitality. Each is an indication of the state of the organism; and although no one of them is of outstanding importance when taken alone, a composite of all of them gives you a clue to the child's health status. A healthy five-, six-, or seven-year-old has bright eyes, color in his cheeks, straight legs, and an amazing amount of vitality. He sits and stands fairly straight and does not slump over his desk (if it is the right height) or lean heavily on his arms. He runs about a great deal and is still for only short periods of time. Temporary conditions, like staying up too late the night before or going without breakfast, may make a child depart from these accepted standards in one or more respects; but where a child shows these differences habitually, it is best to investigate and probably to refer him to a doctor. Well children are not dreamy, listless, and inactive—quite the opposite—and the causes for behavior of this kind should be discovered as early as possible, when the children are five, six, or seven if not before.

Eye and Ear Defects

The early school years are the time to catch defects of vision and hearing—to discover children who are handicapped by not being able to see and hear as well as other children. The children themselves cannot tell you that they cannot see or hear well. They do not know what "well" means. They only know that the blackboard is a meaningless blur or the teacher's voice a meaningless mumble and that other children are able to get things that they do not get. It does not need a clinical examination with apparatus to detect many of these eye and ear defects. There are things that children do in their everyday life that should make teachers and students suspicious. Leaning over to get close to books and pictures, squinting, frowning, and stumbling over objects are some of the things children do when they cannot see well. When they ask to have directions or questions repeated, when they say "what?" too often, when they perpetually push to a front seat or lose interest quickly in a back seat, it may be that they cannot hear well. It is the responsibility of the teacher to single out the children in any group who may possibly be handicapped by defects of vision or hearing and to call them to the attention of doctors and parents. So as you observe school children of any age, note not only the ones who wear glasses but also those whose behavior indicates in any way that they may have difficulty in seeing or hearing.

Teeth

The toothless grin of the six- and seven-year-old is familiar to everyone, and you will find it interesting to count the number that you see while you are observing. Children usually have their full set (twenty) of temporary or milk teeth at three and begin to lose them around six.[1] There is considerable variation among children, of course, because such things as the mother's nutrition before the child's birth, climate, and race influence the development of the teeth. But early childhood is the expected time for the baby teeth to drop out. In one second grade, five of the eight children on the front row had one or two front teeth missing. The business of shedding one's teeth looms large in the life of the child of this age. All sorts of procedures, rewards, and folk tales have grown up around it. Some day an interesting study might be made of the ages at which a group of children lost their teeth, the ways they "pulled them out," the rewards they received, and the superstitions about the discarded teeth. Grownups who long ago developed their permanent teeth have forgotten what exciting events take place when one is losing one's baby teeth.

One thing we can see for ourselves is that children with teeth missing cannot chew so well as if they had a full set. However, there is no need to fuss over them or to make them self-conscious about their condition. Fortunately, a tooth does not come out until it is pushed out by the permanent one that is to take its place, so the space is not vacant for long; but sometimes, when children find it difficult to eat certain foods, temporary adjustment may be made for them in a matter-of-fact way.

It is important, too, that the permanent teeth come in straight, well spaced, and in good condition. It will not be so easy for you to see this as it was the toothless grins, but notice all you can about the way the new teeth are coming in.

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[1] Bartlett, Frederic H., *Infants and Children*, p. 270, Farrar & Rinehart, Inc., 1932.

Make a record of any children whose teeth seem to you to indicate need for examination by a dentist, and see if the parents, school records, or the teacher agrees with you in your concern about them.

NUTRITION PROBLEMS

The nutrition problems of the five-, six-, and seven-year-old are not problems of the selection of food or of getting him to eat it. The child of this age eats about what the rest of the family eats, and no special preparation is necessary. He should not have to be coaxed to eat the meals that are placed before him. Vegetables do not need to be puréed or meats cut up into small pieces, as they were for the preschool children. A student recorded the food eaten at a birthday party of ten five- and six-year-olds and was amazed to find that the following was consumed: four and a half dozen sandwiches (ham, egg, cheese, and jelly), an average of two and a half glasses of milk apiece, one large piece of birthday cake, one helping of ice cream, and innumerable candy extras. (M. S.) This is not to say that the menu was ideal for this age or the amounts average, but it does illustrate the point that children of five, six, and seven can handle quite adult menus and amounts of food.

The nutrition problems of early childhood have to do with the hurry incident to school. Hours for meals must fit the schedule of school sessions, and there is a general air of tension to get the child to school on time. Everyone is familiar with the morning rush. Everything is hustle and bustle. Fathers dash from a half-eaten breakfast to the train or the office. Children rush off to school, and the bathroom routine which should follow breakfast is either hurried or given up entirely. Many children are too upset to eat much.

Others hurry through the meal, and what they do eat does not nourish them as it would if they took more time to it.

The noon meal, too, suffers because of school. Some schools have afternoon kindergarten, and practically all public schools have an extra afternoon session for first and second grades. As a result, dinner is eaten in almost the same rushed atmosphere that prevails at breakfast time. Some private schools, instead of having two school sessions each day, have one long morning session, and at the end of it the children are too tired to eat a satisfactory meal.

There are undoubtedly children who eat well during the time of adjustment to school, and there are many homes where the air of tension is not felt. But it is true that during the ages of five, six, and seven, the strain of school adjustment may affect a child's nutrition in many ways, and special provision should be made for meeting these problems.

Nutrition is affected not only by food and the conditions under which it is eaten but also by the state of the organism itself. Children should be rested and free from fatigue at mealtimes. In this respect, too, school is a disturbing influence. Although at five years most children do not take afternoon naps, do not really sleep at that time, I mean, they still need quiet rest periods after the noon meal. Most five-year-olds who enter kindergarten for an afternoon session must get their rest either in the morning or not at all. A few afternoon kindergartens have wisely included a rest period as a part of their program, but it is not yet common practice. For a six-year-old who is in school both morning and afternoon, a rest period seems to be out of the question in most schools. Failure to get adequate rest in small doses may mean accumulative fatigue which limits the good the child gets from the food he consumes. It is to be deplored that just at the time when school entrance puts an extra strain on the five-, six-, and seven-year-olds there is less and less opportunity for them to secure needed rest. This is a problem that may seriously affect children's health and one that merits the attention of parents and school authorities. A longer noon period, permitting an hour's rest at home after lunch, a rest period at school or less insistence on being on time for the afternoon session, and more attention to meeting the needs of individual children would do much to solve these nutrition problems of children in the later ages of early childhood.

It will be interesting for you to select one or two children and to study both the home and the school sides of the question of getting to school on time. Does the child who is never late neglect his meals and his rest to get there? Does the one who is always late eat slowly and well, or are there other reasons to account for his lateness? What is the teacher's attitude toward tardiness and fatigue? What happens to a child who is late or tired? Special studies might be made of these subjects, and the results would no doubt help you to understand the relation between home and school in the early years of childhood.

MUSCULAR DEVELOPMENT

Although children of five, six, and seven seem grown up in comparison with their younger brothers and sisters, they cannot sit still long, and they need many opportunities for activity. Their muscular development is still uneven and incomplete. Control over the large muscles is more advanced than control over the small ones, and the activities of each child are indicative of the stage of his muscular growth.

Lifting and tugging at things is good exercise as well as lots of fun. (*Courtesy of the Institute of Euthenics, Vassar College. Photograph by Margaret DeM. Brown.*)

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Watch these children at play. Notice the games they select. Aren't most of them boisterous and energetic ones, which give the children a chance to let off steam, as it were? See if you can find a difference between the games that the fives and sevens choose and in the skill with which they play them. The difference will not be so obvious as it was between the two- and the four-year-olds, because increments of muscular growth are smaller at the older ages, but you will notice that most sevens show greater skill in running, skipping, and jumping than the fives; that their activities are more intricate; and that there are other indications of their greater control over their body muscles. Whatever the individual or age differences, the outstanding characteristics of the muscular activity of the five-, six-, and seven-year-olds taken as an age group are emphasis on speed, energy, and skill, with little concern for form or grace.

Climbing apparatus, blocks, boards, and boxes have a place in the equipment of the kindergarten and first and second grades, as they have in nursery school. Frequent opportunities to move around, to stretch one's legs, and occasional periods of strenuous activities are also desirable for children this age. Anything that encourages five-, six-, and seven-year-olds to exercise their bodies promotes healthy development of the large muscles.

The muscles of the hands and fingers are not so advanced in their development at this age as those of the trunk, arms, and legs, so you will find the children little interested in sewing, writing, and other sedentary activities. They will do these things when they see a need for them, to use in their play or to make a present for someone, but they will not do them for the joy of it, as they run or jump. They will stay at these tasks only a short time and show signs of strain which are not present when they use the large muscles. Watch six-year-old Jane trying to sew an apron. Her needle is large, the material easy to sew; but in spite of all the help she receives, her stitches are wide apart, and the product crude. Then, too, she twists up her face, puckers her brow, sighs at almost every stitch, and gives other evidences of being under a strain. Study seven-year-old George as he prints a sign for the garage he has just built with blocks. He clutches the large crayon tightly, presses it hard on the paper. Even then it gets away from him at the end of each letter and goes way beyond the place he intended to stop. The result is a jagged line of crooked letters. And he, too, shows evidences of strain while working.

The reason these children have such difficulty doing these tasks is that their small muscles have not yet developed to the point where they can do them easily. It is not that "they could do better if they tried harder" or that they need more practice and instruction. It is that they need to live longer, their muscles need to develop more, so that control over the hands and fingers may be accomplished with comparative ease and enjoyment. It will be apparent to you from your observations that for most children this point is not reached during the years of early childhood. This accounts for the facts that in the first few grades large pencils, paintbrushes, and crayons are provided; that there is little emphasis on fine writing or tiny handwork of any kind; and that periods of seat work are interspersed with periods of more vigorous activity. Five-, six-, and seven-year-olds are made that way; their muscles are not yet fully or evenly developed. It is only logical for education to go along with nature, emphasizing certain things at certain age levels when growth has progressed to the point where children can do them easily and with enjoyment.

INTELLECTUAL INTERESTS AND ABILITIES

Children grow in intellectual interests and abilities just as they do in muscular control. Each year sees an almost imperceptible widening of interests and a deepening of comprehension. Children of five, six, and seven are interested in almost everything of the present time and near place—things and people who touch their lives, like airplanes or the postman. They are not interested in the war in China today or the American Civil War. The former is too far removed from them in place, and the latter in time. They are able to comprehend many relationships, such as how a letter gets from one place to another, what libraries are for, and why it takes money to buy things at a store. They cannot grasp the intricacies of engine construction or of literary composition. Their minds are not yet complete; they, too, must grow slowly, feeding on experience and information just as their bodies feed on milk and vegetables.

Keep track of the projects you see in the different classrooms. A project is a theme around which a group of children carry out their varied activities, and as a method of teaching it is growing more and more popular. Don't expect all children in the grade to be working on the same project. Some children will not be working on a project at all; but almost certainly you will see some, if not all, of the following projects in progress: fire engines, post offices, stores, boats, trains, planes, farms. Wonderful contraptions of blocks, boards, and colored paper will occupy important places in the room for weeks and even months at a time. Every day some of the children will work on them, carry out dramatic play with them, and in this way learn not only the rudiments of the usual school subjects but also how to work together toward a common end.

Dramatic Play

Dramatic play is so much a part of the life of projects at this early age level that it will be profitable to discuss it here.

Early in your observations, you will undoubtedly see the children in costumes of various kinds and of rather simple construction. Some headgear and a small apron make a satisfying costume for a five-year-old. A six-year-old puts on high heels and gloves and pretends that she is grown up. Seven-year-olds like a little more covering, a scarf or a kerchief or a dress, but details of finish and buttons are not essential. There is no doubt that dressing up has an important place in the play life of children.

Not all dramatic play requires costumes, but a good deal of it requires property at this age. Blocks and boards are needed for garages, hangars, and houses. Dolls, dishes, and carpet sweepers make house play more real. Wooden animals and fences enrich farm play. These are only a few of the things needed in the projects and dramatic play of the five-, six-, and seven-year-olds.

The central themes of the play are equally varied and include the activities with which the children are familiar—things that have come within their experience. Two children will play mother and storekeeper; three or four will have a party; five or six will play boat and take a trip somewhere assigning the jobs of captain, passengers, and ticket taker to different members of the group.

The same central theme may interest five-year-olds and seven-year-olds—in fact older children, too. Each age group handles it in a slightly different way, in line with the stage of their intellectual growth and their background of experience and information.

For instance, the five-year-olds play train in a comparatively simple way, with tickets, a ticket man, an engineer, and some passengers. For seven-year-olds the play is much more complicated. They make tickets to be sold and collected, baggage to be taken on and off; they serve meals and arrange sleeping accommodations. All sorts of details are introduced to complicate the picture and to make it more interesting for the older children. Train play is not limited to any particular age. It can be valuable for a wide range of ages. As children grow in their interests and intellectual ability, the play grows increasingly in complexity and instructiveness.

Do not think that projects exist only in classrooms. They can be found wherever children play together. If the schools in which you are observing do not provide the illustrations you are looking for, pursue the children to a playroom, a playground, or a back yard, anywhere where they are free to direct their own activities. There you will find a project of some kind, without elaborate materials, perhaps, but nonetheless involving group cooperation around a central theme. Make a note of the different types of play that the children suggest: "Let's play store, mailman, train," etc. And the types of play that they actually carry out. Take notes on the things that the five-year-olds do. Then observe a group of seven-year-olds under the same circumstances, and compare the dramatic play that they carry on. If you can find two groups carrying out the same type of play, the comparison will be especially interesting. If the children are not all of approximately the same age, you may see some interesting division of labor, the older ones working on the more intricate things; the younger, fetching and carrying for them.

One important thing for you to understand from the study of group projects and dramatic play activities of children of five, six, and seven is the growth in intellectual interests and abilities that takes place during these years.

GETTING ALONG WITH OTHER CHILDREN

Just as children grow in their intellectual interests and abilities, so they gain from year to year in their ability to get along with other children and to adjust to larger groups. We have very little scientific information about the stages of social development through which children pass, but we are pretty sure that it is not all a matter of experience and training. Maturation—the inner growth of muscles, nerves, and brain connections—undoubtedly plays its part in making a child the social being he eventually turns out to be.

Five-, six-, and seven-year-olds can play together nicely in groups of seven or eight for quite long periods of time. There is very little crying, and there are comparatively few fist fights. Children this age seem to be able to work out their problems without recourse to physical force and with enough satisfaction to themselves to make them continue to stick together as a group. Just how they do it we do not understand. Sometimes it can be traced to a leader who directs things wisely; sometimes, to one who bosses in what seems to us a most objectionable way but which does not

A typical playground scene. Small groups of children working on unrelated projects. (*Courtesy of the Institute of Euthenics, Vassar College. Photograph by Margaret DeM. Brown.*)

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seem so to the children. At other times, two children seem to dominate the group because of their greater fertility of ideas. What it is that holds groups together or makes them break apart we do not know. We know only that as children grow older, their spontaneously formed groups become larger and stay together longer and accomplish more.

We must not paint too glowing a picture here of the social development of the five-, six-, and seven-year-olds. They do not always work together amicably. They show a great deal of individualism and rivalry. Older children "gang up" on the younger ones: "Don't let's play with him; he's a baby." A group may gang up on an individual and exclude him from their play. There is constant boasting, trying to establish the superiority of one's own products or possessions. George shouts, "See my father's new car! It is bigger than anybody else's!" Jane says, "My mother is a hundred," a boast that ignores facts and conventions in an attempt to establish an unbeatable record. You will doubtless find other examples during your observations.

The fact is that five-, six-, and seven-year-olds present an interesting combination of the two opposites in social behavior: ability to work together toward a common end and an intense personal rivalry. For this reason, you will find the social development of children this age a fertile field for study and research.

Take records of some five-year-old children and of children who are nearing their eighth birthdays. Study them to see if you find any age differences. Do the older children form larger groups and stay together longer? Do the younger ones squabble more? Which children seem to you the more grown up in their social behavior? Why do you think so?

It is important to have experience in observing and analyzing the social development of children so that you can later apply this knowledge to understanding your own behavior or that of other adults.

LANGUAGE

The conversation of five-, six-, and seven-year-olds seems so grown up that we are likely to forget that there are still wide individual differences in the language development of different children. Virginia, at seven, explains that, "We got a closet at our house that hasn't got any light in it, and we can't find our mittens or anything in it in the dark. We're going to put this table in it and put a light on it so we can see." John, when asked what he is making, raises his hand about 2 feet from the table and says "A house, that big." In between these two extremes of expression are varying degrees of volubility and vocabulary used by children this age.

No good standards are available to tell you what words, and how many, children use at five, six, and seven. Language is influenced by so many factors—whether one is a boy or a girl, what one hears spoken at home, and the need to make oneself understood; these and many other things contribute to the growth of language. Individual variations between children of the same age are so wide that no single standard would be possible or valuable. The older children grow the greater are the differences between them, so we are not surprised to find that there is little scientific information about size and kind of vocabulary for children above the preschool age. For this reason, we can discuss the language development of five-, six-, and seven-year-olds in only very general terms.

At these ages, children are capable of using long sentences and of putting several sentences together to tell a story. They use language to express their ideas—as a means of communication—more than the preschool child does, but they still vocalize at times for the joy of it. They ask innumerable questions and delight to repeat big words and naughty phrases. "I'll smack you in the face," "I'll punch you in the pants" were expressions frequently heard among a group of six-year-old girls. The actions did not suit the words; the fun seemed to be in the saying. Another six-year-old girl liked to use the words from stories that had been read to her; for example, "And then through vain the queen went through the unsearchable mountain. Then the prince and the princess bid farewell to the little boy and the other gangs." (J. B.)

Questions beginning with "why, what, how" seem to be the stock in trade of the language of children at this age, to the despair of most grownups. Sometimes these questions show a genuine desire to learn and at other times just a hope of getting attention. Whatever the underlying motive, the number and kinds of questions children this age can ask far outstrip the ability of adults to answer them.

Observation Notes

When you are studying language development, be sure to take notes, even though it is difficult to keep up with the children in their conversation. Concentrate on one child at a time or, at most, two children playing together, and use shorthand of your own devising wherever you can. Unless you write things down exactly as the children say them, you will be unable to repeat them accurately when you want them. Unconsciously your own way of expressing things will creep in and spoil the illustration. So take your notebook, sit on the side lines, and make records of the particular phase of language development you are studying.

You might take short samples of the language of several children and compare them for length of sentences, parts of speech, and numerous other things. Or you may take several samples of one child—a continuous record, perhaps—and analyze it in the same way. Compare the youngest five-year-old and the oldest seven-year-old, and see if you can find any age differences in their language development. It would be interesting also to study children's questions, making records of what they ask about and what seem to be the underlying reasons for their interest. Or to note the ways children use language just for the sound of it in contrast to their use of it as a means of communication. There are many different phases of language development that it would be profitable for you to study. You will perhaps become interested in some one phase and want to follow it through the higher age levels. This will help you to appreciate the differences between individuals and between age levels in their ability to use language.

READING

Most children learn to read somewhere in the ages five, six, or seven. Today there is a controversy about which is the proper age to learn to read and what is the best method to accomplish it. A great deal of research has been done on this subject, and many books have been published to guide teachers, children, and parents. There is not space here to go into the intricacies of the problem or to consider the arguments for and against different methods of teaching reading.

But we shall discuss two important points which are little appreciated by the lay person. The first is that there is more to learning to read than just saying a word when you see it, and the second that some children are ready to read at a younger age than others.

Why is learning to read such a complicated process? What more is involved than just saying the word when you see it? The importance of understanding what you read is the crux of the whole matter. What good does it do you if you can recognize hundreds of words and phrases and yet have no knowledge of what they mean? Imagine yourself trying to learn a foreign language merely by pronouncing the syllables and words. You can appreciate, then, how lost a child feels when he learns to read our language in the same way without understanding what he reads. Children can be taught at a very early age to say the words when they see them; there is no trick in that and no evidence of precocity. It is merely a waste of everybody's time if the child does not understand what he is reading. That is why modern educators defer the teaching of reading until children have a wide background of experience, until they are familiar with lots of things to read about. After all, reading is merely a tool to enable one to share by means of the printed page the experience and thoughts of others. Like spoken language, it is a means of communication between people and has value only when we understand what the other fellow is talking about.

Some children reach that stage of understanding earlier than others. "Reading readiness," it is called; and it involves physical growth of eye muscles and nerves, development of intellectual abilities, and a broadening of interests and experiences to the point where the printed symbols mean something to a child. For the majority of children, this comes at about six and a half, later than we used to think. The time to begin reading, then, is in the second half of the first grade, certainly not before. Individual children may ask about letters, read signs, and show interest in figuring out words earlier than this; others will not be ready to read even at seven. The important thing in learning to read is to receive the right kind of help when ready for it and to master the mechanics of reading so easily that real enjoyment of reading will result from it. To be forced to read before one is ready for it may lead to bad habits of reading, discouragement, feelings of failure, and a genuine distaste for all reading.

The results of recent experiments in the psychology of learning to read have developed in most educators and child study specialists an appreciation of individual differences in the reading readiness of children of the same age and a wholesome respect for the complexity of the mechanics of teaching beginning reading. Some few schools still teach reading in the kindergarten, and a few defer it until the second grade or even later. By far the largest majority of schools include it in the curriculum of the first grade, adjusting the teaching to the individual children and their stage of readiness.

Keep these points in mind as you observe in different schools and different grades. Study the methods of teaching and the way different children respond to them. Try to detect the signs of reading readiness in children in the kindergarten and first grade, to pick out the "poor readers" and the "good readers" in second grade. Do not become so preoccupied with the mechanics of teaching reading or the controversies that surround it that you lose sight of the five-, six-, and seven-year-old children who, after all, are your particular interest just now.

APPRECIATION OF NUMBER

Although five-, six-, and seven-year-olds are advanced over children of preschool age in appreciation of number and time, they are still more limited than most grownups expect them to be. It is difficult to say just how number concept develops and at just what ages children understand three or four or ten or twenty. Very little scientific work has been done on this subject, so we do not know what factors influence it and how. About all that we can say is that number vocabulary precedes number understanding and that a real appreciation of number comes slowly from practice and experience with concrete objects.

Five-year-olds are very much interested in counting, with and without concrete objects. The latter is the harder task, as you know. For example, one child of five said correctly the numbers up to ten and then started to count the children at her table. She pointed as she counted, skipped some children, indicated others twice, and ended with the number eight, which was incorrect. She knew the names of the numbers and which came after which, but she did not know what the numbers stood for. In another kindergarten late in the year when the children were almost six and had had more experience with numbers, twelve out of fifteen children could make accurate count of the number in their group at any time.

Six-year-olds can do simple addition with concrete examples. They can take attendance, plan the number of places necessary for lunch, and set the table, all activities that require adding small numbers. They do not always arrive at the total by counting from one, as the fives do, but often add two and one, five and two, and make other simple number combinations. Money is still difficult for them. To one child, ten cents is "Good Humor money," which illustrates the point that numbers have meaning for young children only in line with their experience.

Seven-year-olds can do simple subtraction as well as addition problems. They understand simple fractions, like a half, a third, and a fourth of something. They know that there are five pennies in a nickel and four quarters in a dollar. However they are still largely interested in counting activities and feel very little need to measure things.

Remember that we are speaking of central tendencies, the things that most children that age do. There are some children who are very much advanced in their understanding of number, and others a little slower. Experience and instruction undoubtedly play their part in determining the number appreciation of children at different ages. The point for us to keep in mind here is that ability to perform arithmetical processes develops slowly over a period of years, that like so many of the other phases of growth it is due both to maturation and to training, and that best results are obtained if the two go along together. Nothing is really accomplished by forcing children to do complicated sums or problems before these have any meaning for them.

FIVE-, SIX-, AND SEVEN-YEAR-OLDS AS PEOPLE

Even babies and preschool children are people, although we don't often think of them that way. When a child gets to be five, six, and seven, there is no doubt that he is a person who must be reckoned with just as the other people in the family are. He begins to assert himself, to have ideas of his own, and to make his presence felt in innumerable ways. It is wise to take him seriously at this age, if not before, and to respect his individual interests as well as the activities characteristic of his age.

Five- and six-year-olds are serious about themselves. They are impressed with their own ability to imitate grown-up behavior. They like to take responsibility for going to school by themselves, carrying messages, and picking up their rooms, for instance. Their conversation sounds very mature at times, and one can recognize expressions and intonations that adults have used with them.

Interestingly enough, seven-year-olds tend to grow out of this stage of seriousness once they have demonstrated their ability to behave in grown-up fashion. They throw over the maturity that amazed us in the younger children and become "silly" and "foolish." One teacher characterizes this as a revolt from the routine established by adults. Whatever its causes, the fact remains that taking oneself seriously does not develop regularly from day to day and from year to year. It has its ups and downs, which is just as well. It would be too bad if all grownups took themselves as seriously as most five- and six-year-olds do.

However, as long as the children take themselves seriously, we should respect this attitude and treat them in like manner. Talk to them in grown-up fashion but about the things they are interested in. Let them take responsibility for the things they seem eager to do, even though the job may be a bit too big for them at first. Wherever possible, give them a "chance to capitulate and still save their self-respect." Never humiliate them by pointing out to them how very immature they really are. In other words, treat them as you would treat a friend of your own age or as you yourself would like to be treated, and above all take them as seriously as they do themselves.

SUGGESTED OBSERVATIONS

There are many other characteristics of the behavior of five-, six-, and seven-year-olds that we have not been able to discuss in this chapter but that you will want to study in your observations. For instance, what collections do children this age make? With what discrimination? What should parents and teachers do about these collections? What superstitions do fives, sixes, and sevens show? Picking up pins, stepping on cracks? What others? What individual differences do you see in the way in which children react to these superstitions? What progress has this age made in telling time? What evidence of this do you find in your observations? What time words do the children use? Correctly? Incorrectly? These are only a few suggestions. Others will occur to you as you are making your observations. There are so many phases of development, each contributing to the welfare of the "whole child," that the list of things that you might profitably study at any age level seems practically limitless.

SUMMARY

The age of early childhood is the age of first contact with school, and many of its problems arise from the adjustments that this requires. Large muscle development is practically perfected during the ages five, six, and seven, and small muscle growth progresses noticeably over that of the preschool age, although it is still far from its ultimate development. The interests of children widen at this age to include people and places near them in time and place. Dramatic play holds an important place in their activities and is developed in considerable detail now that large numbers of children can play together for longer periods of time. The children take themselves very seriously, and language becomes more and more a tool of communication.

These are the age level characteristics that were discussed in this chapter, the things that children five, six, and seven have in common. Each child shows these characteristics in different combinations and amounts, which accounts for his individual personality. In planning a program to meet the needs of children at this or any other age, both age level characteristics and individual differences must be taken into account.

REFERENCES

LIST I

BAILEY, EDNA W., ANITA D. LATON, and ELIZABETH L. BISHOP: *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933.
Chapter V. Outline for Study of Child in Elementary School. pp. 76–132.

BAIN, WINIFRED E.: *Parents Look at Modern Education*, D. Appleton Century Company, Inc., 1935.
Chapter III. Will you Send your Child to a Kindergarten? pp. 33–56.
Chapter IV. Your Child's Progress in the Elementary School. pp. 57–81.
Chapter VIII. The Tool Subjects in the Modern Curriculum. pp. 156–189.

Foster, Josephine C.: *Busy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter X. Stories and Books for Children. pp. 183–219.
Chapter XI. Music for Children. pp. 220–234.
Chapter XIII. Education at Home and at School. pp. 258–277.

Langdon, Grace: *Home Guidance for Young Children*, John Day Company, Inc., 1931.
Chapter VIII. Parents' Attitudes—A Summary. pp. 350–364.
Chapter IX. Children's Learning—A Summary of Principles. pp. 365–369.

Morgan, John J. B.: *Child Psychology*, Farrar & Rinehart, rev. ed. 1934.
Chapter VII. Development of Meanings. pp. 215–238.
Chapter IX. Language. pp. 270–308.

Strang, Ruth: *An Introduction to Child Study*, The Macmillan Company, rev. ed. 1938.
Chapter XIV. Development during the Primary Period. pp. 289–332.
Chapter XV. How Primary Children Learn. pp. 333–364.
Chapter XVI. Special Problems of the Primary Period. pp. 365–398.
Chapter XVII. Studying Primary Children. pp. 399–434.

Stuart, Harold C.: *Healthy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter VI. The Body Framework and Posture. pp. 116–143.

LIST II

Andrus, Ruth, and associates: *Curriculum Guides for Teachers of Children from Two to Six Years of Age*, John Day Company, Inc., in association with Reynal & Hitchcock, 1936.

Baker, Clara Belle, director of the Children's School, and other members of the staff: *Curriculum Records of the Children's School*, Bureau of Publications, National College of Education, 1932.
Units of Work in the Kindergarten. pp. 31–51.
Units of Work in the First Grade. pp. 52–88.
Units of Work in the Second Grade. pp. 89–119.
English Records. pp. 293–312, 347–366.
Arithmetic Records. pp. 401–415.

Cunningham, Bess V.: Family Behavior, W. B. Saunders Company, 1936.
Chapter V. Neighborhoods. pp. 126–169.

Fisher, Dorothy Canfield, and Sidonie Matsner Gruenberg, ed.: *Our Children*, Viking Press, Inc., 1932.
Chapter XVII. Recent Developments and Current Trends in Education. pp. 185–194.
Chapter XVIII. A Challenge to Schools. pp. 195–203.

Glover, Katherine, and Evelyn Dewey: *Children of the New Day*, D. Appleton-Century Company, Inc., 1934.
Drama of Growth:
  The Physical Instrument. pp. 70–89.
Education By and Large:
  In the School. pp. 211–229.

Goodenough, Florence L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.
Chapter XV. The Kindergarten Age. pp. 324–346.

Strain, Frances: *New Patterns in Sex Teaching*, D. Appleton-Century Company, Inc., 1934.
Chapter VIII. The Questionless Child. pp. 133–160.

6 . . . The Transition Year

EIGHT-YEAR-OLDS

THE eight-year-olds have a chapter all to themselves, and no doubt you are wondering why. It is not that they are so very different from seven-year-olds or nine-year-olds, the ages on either side of them, but rather that they stand in between two rather clearly defined periods of childhood. Early childhood is behind them; the gang age, or preadolescence, has not yet been reached. The last of the primary work is usually mastered in this year; ahead lies the sterner stuff of the upper grades. For these reasons, eight-year-olds are in a sort of transition age both genetically and educationally speaking.

From the genetic point of view, there is uncertainty about whether eight-year-olds are more like the younger than the older children. There are apparently no psychological dividing lines between any ages, no universally accepted way of grouping ages together, but the uncertainty about eight-year-olds seems to be even greater than about the other years. One authority classifies six-, seven-, and eight-year-olds together; another puts "eight to twelve" in one group. This suggests that the age has enough of the characteristics of the ages on both sides of it to be included in either one.

In the absence of conclusive evidence, the author has arbitrarily separated this age from those on either side of it in order to point out the transitional features of the stage through which these children are passing.

Educationally, eight-year-olds are between two clearly defined school divisions, the primary and the intermediate, to use the conventional grade designations. Whatever the groups are called, whether third grade, or "eights," or by some other name, it is a time for checking on the children's school achievement, for diagnosing any difficulties and for giving special help in overcoming them. Elementary work is behind, and heavier work is ahead. At eight years of age, if not before, each child whose schoolwork is not going smoothly should be studied by experts and helped in special ways so that his future education will be geared to his abilities and based on an adequate mastery of the tools of learning. The early years are the ones in which to lay a sound foundation of the right habits of physical health, of doing one's schoolwork, and of facing life and one's fellow men. If, for any reason, this has not been accomplished by eight years, it is time to find out why and to do something to make up the lack.

Three youngsters, all boys, stood on the author's doorstep not long ago selling magazines, an eager light in their eyes. Around the neck of one hung a change container such as bus conductors use, and its possessor clicked it invitingly and incessantly during the interview. Another carried the magazines, the third was spokesman, but it took all three to make change. This was not entirely because of their inadequate arithmetic knowledge but rather because of the fascination of making change with the portable cash register. They bickered and clicked and put nickels and dimes back in the machine and went through the whole process all over again several times. At long last, the transaction was completed, and the purchaser asked their names and ages. John was seven, George was eight, and Jim was nine, a typical group of youngsters in middle childhood illustrating in their behavior many of the characteristics of eight-year-olds.

SOURCES OF INFORMATION

The most helpful sources of information about eight-year-olds are the teachers and the children themselves. The literature contains disappointingly little about this age taken by itself. It is usually considered along with several other ages, and the characteristics of the one age to which this chapter is devoted are not singled out for comment. Do not be discouraged by this lack of definite facts about eight-year-olds. You can still piece together a very good picture of the age by observing the children themselves and by listening to what their teachers and parents have to say about them. Teachers, through daily contact with eight-year-olds over a period of years, know how these children differ from sevens and nines and know just what to expect of them. Their opinions and ideas don't all agree. That is to be expected, of course, since their information is based on personal observation with little opportunity for scientific evaluation. But the fact remains that, incomplete and contradictory as their opinions sometimes are, teachers are about the best source of information available for eight-year-olds.

The other helpful sources of information are the children themselves. That goes without saying. Children are the original source of our information about any age; and since no one has studied eight-year-olds intensively and summarized their outstanding characteristics for us, it is up to each child study student to make observations and analyze them for herself.

You will find it interesting to talk over with one or more third grade teachers the things they have discovered about eight-year-olds. Study the points on which these authorities agree and disagree. Evaluate the evidence on which their opinions are based, and compare with the material you have collected in your own notes.

OBSERVATIONS

The easiest place to observe eight-year-olds is in school, but don't neglect the other opportunities that come your way like the incident of the boys selling magazines described earlier in this chapter. And don't be disturbed if you have to observe children of other ages along with the eights. It would be much simpler for child study students if all children of one age could be segregated for observation purposes, but it wouldn't give a true picture of the situation.

Even in schools that group their children by chronological age, not all eight-year-olds will be found together; a few will be with the sevens, and some with the nines. In schools that use the conventional system of grades and promote on the basis of subject matter, the range of the grades in which you will find eight-year-olds will be even wider. Third grade at the beginning of the school year will probably have the largest number of them, but you will have to look in second and fourth and even fifth grades to find all the children eight years of age in that school. A good plan is to make most of your observations in the group that has the largest number of eight-year-olds at the time of year you are studying these children. Then single out the children of the same age who are in other grades, and observe them on the playground or in other places. You will find the same plan helpful when you observe older children, too.

It is a good idea to study a group of children first before you get the information about them from their teachers or the records. See if you can pick out the youngest and the oldest by yourself without knowing their ages. Give reasons for your selections. Note the healthiest looking children and those who seem to be in poor condition. Pick out the happiest ones, and tell on what behavior you base your judgment. Try to guess what kind of homes they come from. Do the same for children who seem nervous or unhappy. Select the child who appeals to you most, and tell why. See whether your friends agree with you.

Now look at the group as a whole. About how long do they sit still at any one time? What holds their interest longest? What books do they like? What conception of time do they have? Of number? These are just a few of the things that it would be profitable for you to try to find out by observing. By guiding your observations in this way, you will learn to direct your attention to special aspects of child growth and to check your opinions against the known facts and the observations of others.

Let us look for a moment at the characteristics that most eight-year-olds show. You understand, of course, that these characteristics are not limited to children of that age alone and that the list given here is incomplete and subject to revision. Most of the points are based on observation and have not yet been scientifically established. Future data may cause us to change our opinions and to reinterpret what we now list as the outstanding characteristics of eight-year-olds.

PHYSICAL DEVELOPMENT

Eight-year-olds are sturdy and healthy, as a rule. They are subject to the usual children's diseases but come through them with little or no serious aftereffects, given proper nursing and medical care. Accidents rank as the chief cause of death, automobiles, falls, and drowning heading the list.[1]

Most eight-year-olds need so little medical attention that even that little is often neglected. John is husky and active; the doctor's report on previous physical examinations has been "He's fine," and John's mother puts off the annual checkup to "a more convenient time." This is an unwise procedure, because an ounce of prevention is worth a pound of cure. One way to keep John in good condition is to check at least annually on his physical growth, on his food, exercise, and daily routine. The years roll by so fast, and changes creep in so surreptitiously, that some form of stocktaking is desirable at regular intervals. The annual physical examination for well children serves that important purpose, even if the verdict is a clean bill of health.

Muscular Development

Like his health, the muscular development of the eight-year-old needs little attention. His large-muscle control is well established, and his small muscles develop noticeably during this year. About this time, he becomes "interested in sewing and weaving and in handling crayons and pencils, in finer paper cutting, and more intricate woodwork."[1] Writing may be encouraged; and higher standards of neatness, regularity in letter form, and margins expected of the children. The muscles of the hands and fingers have developed sufficiently so that most eight-year-old children can do these things without strain. According to Hildreth, "Ink writing is possible even in third grade if children bring small fountain pens and show that they can take proper care of them."[2]

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[1] STUART, HAROLD C., *Healthy Childhood*, p. 297, D. Appleton-Century Company, Inc., 1933.

One word of caution. There is likely to be a gap between the things eight-year-olds' *want* to make with their hands and the things they *can* make. Just as his "eyes are bigger than his stomach," sometimes, so an eight-year-old's ideas are bigger than his skills. If George can't be dissuaded from making an airplane "just like the one we rode in last summer, only smaller," then he should be helped with it and encouraged to be satisfied with less than a perfect model. Give him assistance with the hard places and approval for parts well done. Suggest that he substitute simple things for the complicated ones he has in mind. Do everything possible to help him finish the job with satisfaction to himself. Eight-year-olds feel thwarted, just as we all do, when they cannot make a good job of something they have set their hearts on doing. Too many failures are not good for anyone.

This discrepancy between ideas and skills illustrates one of the principles of growth, which we mentioned in an earlier chapter. The human organism does not grow evenly, all parts making equal progress toward maturity at the same time. Some parts grow faster than others; some spurt ahead, then wait for others to catch up. If grownups understand this and adjust their demands to the present state of the growing child, there are fewer heartaches all around.

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[1] HILDRETH, GERTRUDE, *Learning the Three R's*, p. 250, Educational Publishers, Inc., 1936.

[2] *Ibid.*, p. 253.

INTELLECTUAL INTERESTS AND ABILITIES

The intellectual interests of the eight-year-olds widen in time and space to include people and things far away. Indians, Pilgrims, or Eskimos are familiar sights in third grade classrooms, where they replace the grocer, the policeman, and the fireman popular with second graders. Seven-year-olds stick rather close to home and to themselves in their interests; faraway things seem to be beyond their comprehension. Eight-year-olds want to know about people who lived long ago or who live now in other parts of the world. They make floor maps, fashion covered wagons, or build stockades and then organize dramatic play around them. It is not unusual for them to follow through for months at a time a theme of life among the early settlers. Their interests and ability to do this seem to be due to a combination of inner growth, the thing we know as "maturation," and teaching. Neither one could accomplish it alone, as teachers know to their sorrow. When a teacher tries to develop the children's interest in faraway peoples before they are ready for it, she finds that she has to do the thinking and most of the work to keep the activity going. Once the children have developed to the point where their intellectual horizon has widened to include people and things far away, the interest seems to be almost self-sustaining. The teacher's job is to choose the right moment in the children's development and materials to fit their interests.

Some teachers feel that the main difference between seven- and eight-year-olds intellectually lies in the horizon of their interests. Seven-year-olds are content to stay near home. Eights are not only ready but eager to voyage to other lands.

GROUP ACTIVITIES

What do eight-year-olds do when a group of them get together spontaneously? What games do they play? How do their activities differ from those of children of other ages?

The fact of the matter is that there isn't anything very different about the group activities of eight-year-olds as compared with those of sevens and nines. They are all pretty much the same. Eight-year-olds, standing between these older and younger ages as they do, show some of the characteristics of both. In group activities, as in other respects, this age is a transition period.

The wild running or jumping games of individual competition, where one child is "it," popular in early childhood are still popular with eight-year-olds. Tag, red light, and hopscotch are some that you will undoubtedly see.

Then, too, you will find some team games, played with few if any rules. Eight-year-olds enjoy baseball, football, soccer, and similar sports if you let them play these games in their own unorthodox way. They like the excitement and the activity, but they have not yet developed to the point where they can grasp complicated rules or subordinate

Gardening offers opportunities for nature study and for social cooperation. (*Courtesy of the Institute of Euthenics, Vassar College. Photograph by Margaret DeM. Brown.*)

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self to the good of the team. The result is a modified form of these highly organized sports.

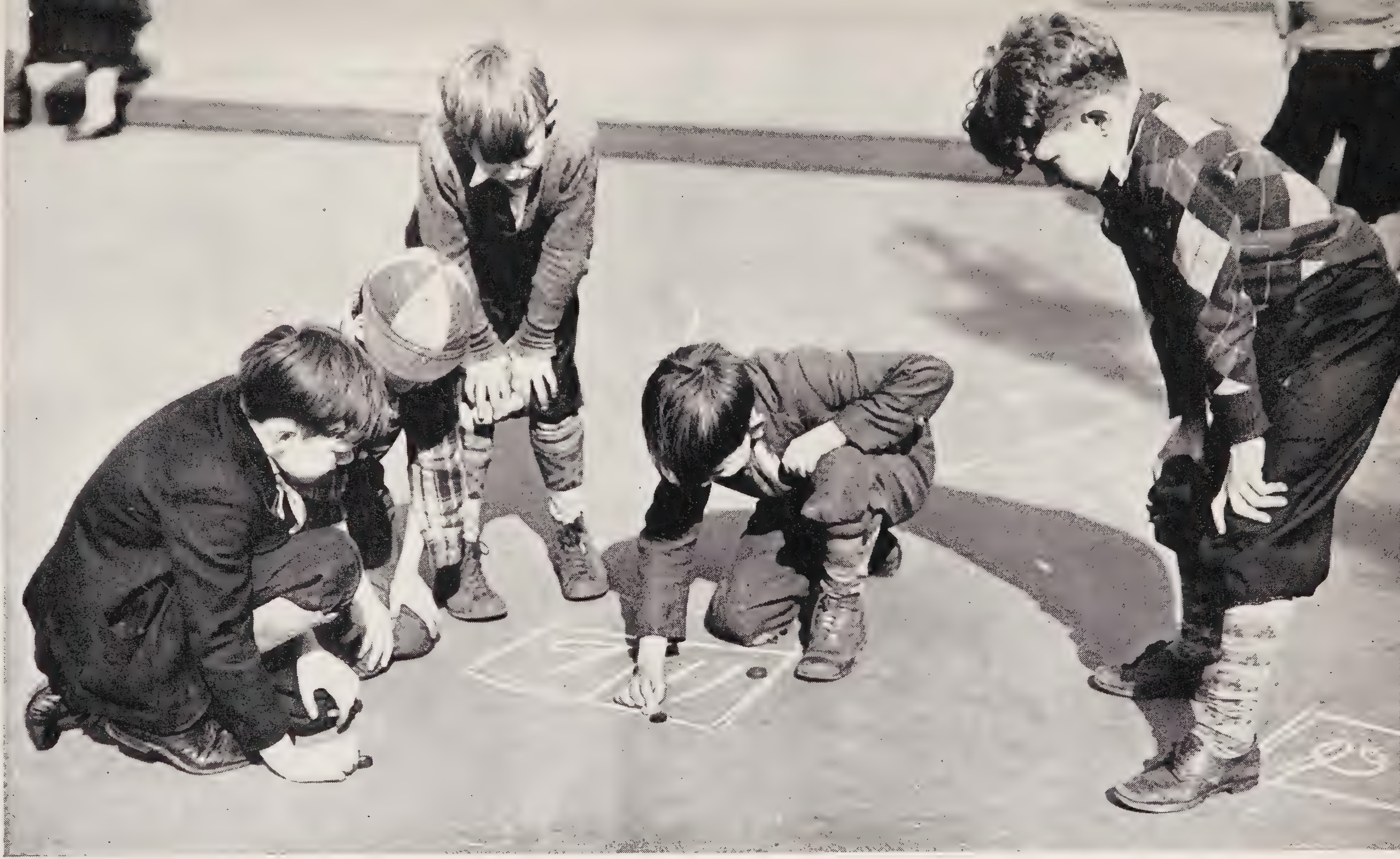
Gangs, clubs, and teams are characteristic of older children; and when eight-year-olds do organize themselves, the results seldom amount to anything in the adult sense of the word. For example, four eight-year-old girls formed a Tree Climbing Club—a secret organization, of course—which met in a favorite tree, the branches of which bore the names "Death Chamber," "Queen Mary," etc. The club had two meetings, did lots of whispering and some climbing, and soon was replaced by other interests. This is typical of the group organizations of eight-year-olds. Where they do come into existence spontaneously at this age, they are trivial and short-lived.

Take time to observe a group of eight-year-olds playing games, and see if you can find in their bickerings and dickerings the elements of individual competition and group cooperation which illustrate the transitional stage of social development through which these children are passing. Notice the variations of popular games played by different groups, and see if you can figure out the basis on which the children change the rules. Does the group follow a self-appointed leader when he says, "Let's do it this way"? Or do they accept some outside authority as final: "My sister says this is the way to do it." To what extent do they work things out together, trying first this and then that until some procedure receives a majority vote?

Another feature of the play of eight-year-olds is the appearance of contraptions like homemade scooters and boxes on wheels. Interest in these things is not limited to this age alone. There is a universal fascination in "things that run," that get one over the ground faster than one's two legs can do it. About eight years, if bicycles are out of the question, children begin to construct their own "wheelers" out of boards, wooden boxes, wheels, and a string to steer with. Little has been written about these wagons, and a study of the different varieties found on the streets of a big city, the uses to which they are put, and the kinds of play that center around them would make a valuable contribution to our understanding of the place they hold in the lives of eight-year-olds and older children.

Closely allied to this interest in getting over the ground quickly is the joy of dressing up and of playing the appropriate parts. Girls don castoff suits, carry handbags, and play at "going to tea at Mrs. Smith's." Boys adopt baseball caps, football uniforms, and cowboy outfits as permanent parts of their wearing apparel. James at eight and a half met his father at the Grand Central Station in New York City arrayed in his football helmet. Only the restraining hand of his mother kept him from arriving in a completely correct football uniform. "George sleeps in his baseball cap," Mrs. Brown complains; "Sam wanted to wear his sombrero to dinner at mother's on Sunday." These are typical remarks of mothers of eight-year-old boys. At this age, children seem not so much to play parts appropriate to their costumes but to live them, sometimes for twenty-four hours of the day, and adults often find it difficult to enter into the spirit of the thing so consistently.

Projects of all kinds will be found in the group activities of eight-year-olds, both in and out of school. Dramatic presentations of stories, conducting roadside stands, making boats, or caring for pets are all things on which several children work together over a considerable period of time. Because of the guidance that teachers give to work carried



Street groups like this one illustrate many characteristics of children. Note the dirty hands, the tousled hair, the different postures, and above all the keen attention. (*Ewing Galloway.*)

on in school, children probably learn more from school projects than from those they develop by themselves in their own back yards. But the home projects should not be disregarded. They, too, are educational and illustrative of the group activities of children about eight years old.

The games and leisure-time activities of eight-year-olds would make an imposing list. You could select any one of them for special study, making records of several children, or you might select one child and study just the games that he or she plays. However you do it, be sure to make one of your observations of eight-year-olds in a back yard, if you can, or somewhere where several children are playing together without adult interference or direction.

SEX DEVELOPMENT AND INTERESTS

Eight-year-olds have only a passing interest in sex and its implications. Their curiosity about many things has long since been satisfied. They are familiar with the differences between boys and girls, men and women. They know something about how babies grow and are born. The sex interests of most eight-year-olds end there.

There are always a few children who have had a poor start and who have learned to be secretive about sex matters. Much that was out in the open before is said or done under cover now. Children whose frank questions went unanswered at five, six, or seven experiment or question in secret at eight. Fortunately, the number of children who are forced to get their sex instruction wherever they can is decreasing with each new crop of youngsters.

Most eight-year-olds have a wholesome, healthy, and slightly casual interest in sex.

Attitudes toward sex and facts about sex should be acquired from babyhood, step by step—each year as children are able to grasp them. But if, for any reason, this groundwork has not been laid, special measures should be taken about the eighth year to remedy these omissions. Books and pictures should be put within a child's reach, and he should be encouraged to take his questions to someone who can answer them frankly and without embarrassment. Where parents find it difficult to do this, the help of the teacher, the doctor, or someone else should be enlisted. The important point is that a child should not grow any older than eight years, preferably not so old as that, without some knowledge of the facts of life and some source of further information about them.

This would be a good subject about which to examine your own attitudes. Would you find it difficult to answer children's questions about sex? Can you tell why? What can you do to change your own attitude and to prepare yourself to be helpful to the children? Notice in your observations the questions that eight-year-olds ask and the interest that they display in sex. If one child stands out as unusually interested, see if you can find the reasons for his or her interest. What is the attitude of the family toward sex? How have they answered the inevitable questions? What form does this sex interest take? These are some of the things that would throw light on the child's "sex problem."

Although sex interest is not great and sex problems not serious at the eight-year level, it is a good time to check on both and to prepare the ground for the next step in the children's sex education and sex development.

EIGHT-YEAR-OLDS AS PEOPLE

Emotional stresses and strains are a part of growing up, as no doubt you appreciate all too well from the experiences of your own childhood. Certain periods stand out as particularly difficult either because of growth changes taking place within you, as at adolescence; or changes in the environment, like the arrival of a baby sister or brother, a move from one neighborhood to another, or the illness or death of a parent which threatens the security of your home.

For most children, the year from the eighth to the ninth birthday has little of stress and strain inherent in it. Physical growth changes are small and comparatively insignificant; there are no inevitable changes of environment like entering school or high school. On the whole, things run along rather smoothly both inside and out, and eight-year-olds are a carefree, happy-go-lucky lot. They take sincere criticism from their colleagues with considerable grace, something that most grownups would do well to imitate. And they are not blocked in their creative and artistic expression as older children are. Their behavior toward adults shows less revolt and silliness than formerly. They settle down to the business of controlling their own conduct by making their own codes of behavior and living up to them. These are the comments that one experienced teacher[1] makes about them. See if her generalizations are borne out by the things you note when you are observing.

Eight-year-olds are allowed quite a bit of independence, as a rule. With bicycles and money of their own, either allowances or earned income, they can wander far afield and enjoy the freedom from maternal supervision. It is fitting that they should test their wings in this fashion, and wise are the parents who plan for it, knowing full well that the habit of returning home is strong upon them. At eight, Jim demanded of his mother the right "to go where I want to go without telling you," and visions of a lost, strayed, or stolen child flashed through his mother's mind. In spite of her fears she consented, and off he trotted, independence written all over his back. Two doors down the street he stopped to play with his pal, and a half hour later he was back at home asking if he could go to the beach with Joe's mother. All was as before except that he *felt* more independent, now that one more apron string had been untied. That feeling is a part of growing up.

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[1] Elizabeth Chapman Gilkeson, principal of the Poughkeepsie Elementary Day School and instructor of child study at Vassar College.

When you are observing eight-year-olds, look for things they do and say that indicate to you, however vaguely, the way they look at themselves and at the world. Do they show self-confidence, timidity, persistence, eagerness, lack of interest, initiative? You cannot answer these questions definitely, as you can those about their height or the number of words they use. But you can be alert to eight-year-olds as people and try to piece together a picture of the seriousness (or lack of it) with which they view themselves and life. This is as important a part of understanding children as knowing what they can do and say at each age level, but it is not so easy to observe.

You will find it interesting when you are studying eight-year-olds to notice parents' attitudes toward this age and its problems. Some parents are tolerant of their children's noise, games, and attachments to odd pieces of wearing apparel and view the results with mild amusement, whereas others are upset and resistant. You might ask several parents of eight-year-olds what are the problems in their households, how long they expect them to last, and how they are meeting them. Ask some of your friends, too, if they remember their own eight-year-old interests and what their parents did about them. Inquiries such as those suggested above would not only give you an insight into the characteristics of the age but would bring out the importance of parent attitudes as well.

A TRANSITION YEAR

In the first part of this chapter, we discussed the outstanding characteristics of eight-year-olds and noted the ways in which they are about equally removed from the younger and older ages. Educationally, these children are in a transition age, too. Behind them lie the years of becoming acquainted with the tools of learning; ahead, the need to use these tools. It is a time for checking on school progress, for giving special help with difficulties, and for mapping at least tentatively each child's educational future.

SCHOOL PLACEMENT OF EIGHT-YEAR-OLDS

Not all eight-year-olds are in the same grade or group in school. One reason why school grouping and chronological age grouping, even with the best intentions, do not agree 100 per cent is that children are born in every month of the year, and the month in which one is born plays an important role in one's school life. To enter school exactly at the right age each year, one should be born in the fall. Being born in the winter is a considerable disadvantage. When school opens, you are right in between groups six months or so older than the usual age for entrance into the lower group and about six months too young to go into the higher one. Birthdays at other times of the year affect one's school life similarly. One reason, then, why all children of the same chronological age are not together in school is that they weren't all born at the right time of year.

Another reason is that during the school year, some of the children have birthdays. The seven-year-olds become eight, and the eight-year-olds nine. It makes a difference what time of year you observe these groups, what ages you will see. Keep this point in mind as you plan your observations.

A third reason is that sometimes children who differ widely from the average for their age get along better with older or younger children than with children their own age. This explains why a few eight-year-olds are found with the nines and tens in school and some with the sevens and sixes. Jane, an exceptionally tall eight-year-old with intellectual ability equal to the average eleven-year-old, is bored by third grade schoolwork and is most unpopular with her contemporaries because she tries to run everything. The school she attends has recognized her difficulties and met them in the best way that its large classes and grade system permit, by putting her a grade ahead, with nine- and ten-year-olds. George, who is slow in learning, is repeating the work of the second year in school, so, at eight, he is with seven-year-olds. Putting children ahead or behind in school in this way does not always solve the problem of those who differ widely from the average, but it does explain why some children are found above and below the grades or groups for their age in school.

The fundamental reason why children of the same age are not all at the same stage in their schoolwork is that the children themselves are very different—different in so many ways that no system of grouping can include all kinds, sizes, and descriptions. Chronological age seems to be the most satisfactory basis for grouping, because it places together children of about the same stage of social development. But even this is not ideal, because, as we know, children of the same chronological age are widely different in other ways.

The Limitations of Chronological Age

Chronological age is such a convenient designation that we tend to use it in too final a sense and to disregard its limitations. It merely means that children have lived in this world just so long.

It would be better if there were another term to describe children at the same stage of development. Techniques for determining social, anatomical, or physiological age may some day be perfected to the point where they will be as conveniently expressed and as easily understood as chronological age. At present, that is not the case, so we are forced to use chronological age, interpreting it with caution.

We know that children of the same age have some characteristics in common just because they have lived this long. And we know, too, that these characteristics exist in different amounts and combinations in different children.

Both internal and external influences account for these differences. Different parents, different genes, different body chemistry, different bony structure—these are a few of the internal influences. Different food, different handling, different living conditions can be listed among the external influences. Truly, the mere fact of living in the world the same length of time seems of small significance when compared with the many different influences that have contributed to the child's development.

Individual Differences in Physical Growth

For instance, George and John are exactly the same age (8-0);[1] their mothers were in the hospital together when they were born. George is 49 inches tall (about average for his age), and John 55, which is average for ten and a half years old. The same sized desks, shoes, or bicycles wouldn't fit them both.

George weighs 52 and John 77½ pounds. The same amount of food wouldn't do for each of them either, because size determines, to a certain extent, the amount of food needed to keep the body going and growing.

If you had to pick out clothes for these two or plan meals for them, you would realize very clearly the significance of individual differences between children of the same chronological age. It is one thing to see the differences on paper, and another to have to deal with them in the flesh.

One third grade teacher had twenty-seven eight-year-olds in her room,[2] with a difference of ten months in their ages. The youngest had just had his eighth birthday, and the oldest was eight years ten months at the time that the following figures were taken. The tallest child in the group was 56 inches, the shortest 48; the heaviest child weighed 77 pounds, the lightest 49, a difference of almost 30 pounds. Think how these differences affect the setup of the classroom and the daily schedule. How can each child be supplied with a desk and chair that fit him? How can the rest and exercise requirements of all the children be met? As you are observing in the classrooms, notice the ways in which the teachers take account of the range in height and weight of the different children. Height and weight are not by any means the most important differences. They are used here merely as convenient examples of the differences in physical growth in children of the same chronological age.

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[1] Where ages are given as two figures with a dash between, the first figure refers to the year; the second, to the month. This one reads "eight years no months."

[2] BAILEY, EDNA W., ANITA D. LATON, and ELIZABETH L. BISHOP, *Outline for Study of Children in Schools*, p. 25, McGraw-Hill Book Company, Inc., 1933.

Individual Differences in Mental Growth

George has a mental ability equal to that of the average child of ten and a half; John, one equal to that of the average seven-year-old—a difference of three and a half years between them. Schoolwork comes easy to George; he does not have to study at all, whereas John needs extra help with his and then doesn't always get it. Their mothers have long since ceased to compare the boys in their schoolwork, just as they stopped comparing their weight when they were babies. Each child is just naturally ahead of the other in some respects, and no amount of wishing or planning can make the other catch up.

The differences in mental ability between children of the same chronological age are illustrated by the data on the group of children whose height and weight we considered above. Intelligence test results are available[1] for twenty-three of the twenty-seven children. According to these, the most advanced child has a mental age equal to the average for children twelve years four months old; and the slowest, almost five years below that, equal to seven years six months. Four children who are exactly the same age (8-1) have mental ages of 7-6, 7-9, 8-9, and 10-1, respectively. Think what these differences mean to a teacher of eight-year-olds. How can she conduct the work so that it can be grasped by the slowest child and yet hold the interest of the brightest? How can she keep all the different mental abilities busy with tasks that are appropriate to each one's stage of growth? A great deal of study has gone into fitting the schoolwork to the wide range of abilities found in every classroom.

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[1] From the data given in Bailey, Laton, and Bishop, *ibid.*, a mental age to correspond with each child's chronological age has been computed by the present author.

We have considered here only two of the ways in which children of the same age differ—physical growth, as evidenced by height and weight; and mental ability, as evidenced by the results of intelligence tests. These examples could be multiplied indefinitely. There is little doubt that children differ. The problem is how to meet these differences. You will find it profitable to analyze a typical third year group in school. You could secure birth dates of the children and determine the range in chronological age, then study mental ages and see what differences are represented. Height, weight, parents' education and occupation would also be interesting points to summarize. And if test results are available, the range in achievement for the different school subjects could be determined. It would be valuable, too, for the teacher of these children to tell you of some of the problems of individual differences in her classroom and of ways that she has tried to meet them. This study could be made of children at any age if your facilities and time do not permit you to concentrate on eight-year-olds.

Newer Ways of Schools

Do you wonder that the "lock-step" type of education is going out of style these days? It is a waste of the teacher's time and the taxpayer's money to try to make all children do the same thing at the same time. Even for such a simple thing as responding to the count "One, close your books; two, put them away; three, stand," the children were never together. Some were too quick, some too slow. And it was not only the teacher and the taxpayer who lost by the lock-step procedure. The children themselves suffered most. The quicker ones marked time while slower ones caught up with them. Some became discouraged when the tasks were too hard for them, some disgusted at tasks too easy.

Ways of meeting the individual differences of the children have been worked out. One is by keeping children of the same chronological age together. But we have seen that even this does not meet all the individual differences that exist within the group. You can no more keep children of the same age at the same stage in school progress than you can keep them all the same height or weight. However, it is a good beginning to have all eight-year-olds together in the same school group, for instance.

Then, within that group, smaller groups can be made up as occasion warrants—four or five who are way ahead with their number work, two or three who work together on scenery for their play, and three or four who need special help with reading. The same children are not always in the same group. Jane may be in all three of these mentioned above, whereas John may be in only the first one. And both children will be in these groups only as long as the teacher feels that they are better off there than in some other group. All groupings are flexible, changing from day to day and from hour to hour at the discretion of the teacher—a much more complicated job of teaching than the old-fashioned way.

Moreover, the children within a group are not all measured by the same standard. There are almost as many standards as there are children. Each child is encouraged to do his best work at his own rate of speed and is not handicapped by having his achievements compared with those of children of unequal ability.

These are some of the ways that modern education is trying to provide for the individual differences in children. Teachers have become very skillful in working out procedures to meet the needs of individual children. You will undoubtedly find many illustrations in your observations. Whenever you see something that is new to you, ask yourself, "How does this procedure take care of individual differences?" In this way, you will come to understand many of the so-called "newfangled" ideas of education.

Because of the fact that schools are trying out different ways of grouping and teaching, you should try to see as many different schools as possible. If all of your observations to date have been made in one school, now would be a good time to visit another. Make a special trip to a neighboring school in a different school district or to one that you know uses methods different from those you are familiar with. The important point is that you should observe children under different kinds of grouping and teaching and not limit your observations to any one type.

We seem to have forgotten that this chapter is about eight-year-olds. But, in reality, we have only digressed a bit to point out that individual differences illustrated by figures from a group of eight-year-olds exist at any age and that modern education has developed ways of meeting them.

SCHOOL ACHIEVEMENT

Earlier in this chapter, we mentioned that eight years is a good time to check on each child's school progress and to make sure that he has the right start in the three R's and other tools of learning. Future success depends in no small measure on facility in using them. One learns to read so that one can read to find out about things. If reading is difficult, one cannot or does not get facts from books. One learns to add and multiply so that one can figure dimensions, expenses, amounts. Not to be able to do this accurately and easily means arduous and time-consuming labor at every step of the way. The same is true of the other so-called "tool subjects," the skills one needs to make further learning easy. A certain minimum ability is essential, and the third year in school is a good time to find out how far each child has progressed in this respect.

There is not space here to consider each of the skills separately, so reading has been selected as an illustration, since it looms so large in importance to children, teachers, and parents.

Checking Reading Progress

In an earlier chapter, we pointed out that it is wise to defer the teaching of reading until children are at least six and a half years old. If this is done, then at eight a child will have had about a year and a half of reading experience and instruction. Ideally, progress should be checked at each step of the way, but this is not always possible. In that case, children should be tested at eight years for their reading ability; and the few who are noticeably behind, singled out for special study. A great many tests are available which the teachers can give to determine the kind and extent of the difficulties they have already undoubtedly suspected. Every group of eight-year-olds will have some children who make low scores on these tests or who seem to need more help with their reading than a regular classroom teacher can give them. About three out of every class of thirty, more boys than girls, would be expected. Not a large number compared with the other twenty-seven, or 90 per cent, who have no difficulty in learning to read. These children should be referred to a reading clinic or similar testing bureau for diagnosis of their difficulties.

It is the fashion just now to call these children "reading disability cases," and one hears a great deal about them as if they were something new. The fact of the matter is that there have always been children with reading difficulties but that now we know more about how to analyze them and how to help the children. We used to think that constitutional defects with which the children were born accounted for the difficulties some children encountered in learning to read and that the outlook was rather hopeless. Now, it is generally believed that the trouble lies with environmental factors, things that can be changed in most cases, and the outlook is more hopeful.

There is no accepted definition of a reading disability. The term merely means that after some instruction in reading, a child fails to make satisfactory progress in this one subject. A child who does poorly in all schoolwork is not a reading disability case, although he unquestionably presents problems that require study.

The causes of difficulty with reading are many and varied and are found in different combinations in different children. Methods of teaching, home influences, dislike of school—one or all three may explain it. It is not a simple matter to determine the special causes in any particular case. The services of a specialist and the facilities of a clinic are usually necessary.

Strangely enough, defective vision is seldom the sole cause of a reading disability. Both good and poor readers may have visual difficulties; the scientists have concluded that "only a small percentage of reading deficiency cases can properly be attributed to defective vision alone."[1]

Likewise, reversal errors are seldom the sole cause or indication of difficulty with reading. A "reversal error" is turning a letter, a number, or a word around so that the part that should be last comes first, and vice versa—writing an S like this: Ƨ; or a 6 like this: ∂, for instance, or saying "on" for "no" or "god" for "dog." These reversals have received a great deal of publicity, but there is disagreement among the scientists about their explanation or their importance. Some hold that this type of error is almost universal in children's early work with numbers and letters[2] and that with increasing age and more practice they are replaced by the correct forms. Others interpret them as indicative of a deep-seated brain condition connected with right- and left-handedness which only expert and long-continued training can overcome.

Whatever the causes, there is evidence that reversal errors are only a small proportion of all the errors made by reading disability cases and that they are made about equally by right- and left-handed children.

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[1] HILDRETH, *loc. cit.*, p. 380.

[2] *Ibid.*, p. 417.

Treatment for Reading Difficulties

Overcoming a reading difficulty is not just a simple process of drilling on certain letters and words. It may involve changing the attitudes of the child and his parents and providing proper reading material, as well as mastering certain essential skills. Individual help at school in reading is desirable in most cases—"remedial work in reading," it is called—and it may be given by the child's regular teacher, a special teacher, or the psychologist. Most children show remarkable improvement once the fundamental causes of the difficulty have been discovered and the co-operation of parents, school, and child enlisted in overcoming them.

The procedure suggested with respect to reading difficulties should be followed for all other difficulties with schoolwork. First, the teacher should single out by means of scientific tests, wherever available, the children who are not getting along in any or all subjects or in their relations with other children. Next, she should try to find the causes of each child's difficulties and make a plan for overcoming them. Where the job seems bigger than she can cope with alone, she should refer the child to psychologist, visiting teacher, or psychiatrist for further study and treatment. Even when all this is done, there will still be children who have difficulty in school, children who will need special study and help at other times in their school lives. Checking on progress when children are eight does not do away with problems when children are ten or twelve or fifteen, but it does enable us to prevent some difficulties entirely, to correct others in their early stages, and to understand the causes of some that develop later.

Visits to behavior clinics and talks with specialists who study these children would be valuable. You might like to make special studies of children who are known to these experts, for one reason or another. Refresh your mind by reading over Appendix II, Techniques for Studying Children, and see how the procedures suggested there agree with those used by social workers and psychiatrists in clinics.

SUMMARY

Eight-year-olds really aren't so different from other ages of about middle childhood. Most of their outstanding characteristics they share with sevens and nines. They are a husky lot, noisy and unkempt and remarkably free from worries and conflicts. To the casual observer they present few problems, and there seems little cause to pry into their health or their schoolwork. But ahead lie the demands of adolescence and continued study, so it is wise to make sure that all is as well with these youngsters physically, socially, and scholastically as modern science can make it. No need to pull these sprouts up by the roots to assure ourselves that they are growing properly. It is sufficient to look them over, add a prop here and there, and remove neighboring weeds.

REFERENCES

LIST I

Bailey, Edna W., Anita D. Laton, and Elizabeth L. Bishop: *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933.

Chapter V. Outline for Study of Child in Elementary School. pp. 76–132.

Bain, Winifred E.: *Parents Look at Modern Education*, D. Appleton-Century Company, Inc., 1935.
Chapter IV. Your Child's Progress in the Elementary School. pp. 57–81.
Chapter VI. Curriculum Changes in the Modern School. pp. 101–132.
Chapter VIII. The Tool Subjects in the Modern Curriculum. pp. 156–189.

Foster, Josephine C.: *Busy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter III. Vigorous Play. pp. 38–75.
Chapter VI. Social and Dramatic Play. pp. 115–130.

Langdon, Grace: *Home Guidance for Young Children*, John Day Company, Inc., 1931.
Chapter VIII. Parents' Attitudes—A Summary. pp. 350–364.
Chapter IX. Children's Learning—A Summary of Principles. pp. 365–369.

Morgan, John J. B.: *Child Psychology*, Farrar & Rinehart, Inc., rev. ed. 1934.
Chapter VIII. Imagination. pp. 239–269.
Chapter XII. Play. pp. 368–395.
Chapter XIII. Social Development. pp. 396–426.

LIST II

Baker, Clara Belle, director of the Children's School, and other members of the staff: *Curriculum Records of the Children's School*, Bureau of Publications, National College of Education, 1932.
Units of Work in the Third Grade. pp. 120–150.
English Records. pp. 313–318, 367–373.
Arithmetic Records. pp. 416–422.

CUNNINGHAM, BESS V.: *Family Behavior*, W. B. Saunders Company, 1936.
Chapter XI. Children and Their Parents. pp. 359–386.

FISHER, DOROTHY CANFIELD, and SIDONIE MATSNER GRUENBERG, ed.: *Our Children*, Viking Press, Inc., 1932.
Chapter VI. Changing Goals of Positive Health. pp. 60–72.
Chapter XII. Individual Differences. pp. 120–129.
Chapter XIV. What Is Sex Education? pp. 140–154.

GOODENOUGH, FLORENCE L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.
Chapter XVI. How Older Children Learn. pp. 347–392.

JENNINGS, H. S.: *The Biological Basis of Human Nature*, W. W. Norton & Company, Inc., 1930.
Chapter VII. Genes and Environment in Relation to the Mind. pp. 152–185.

STRAIN, FRANCES: *New Patterns in Sex Teaching*, D. Appleton-Century Company, Inc., 1934.
Chapter V. Playground Problems. pp. 58–92.

7 . . . The Unknown Age

NINE-, TEN-, AND ELEVEN-YEAR-OLDS

IN NO time at all, so it seems to their parents, eight-year-olds are nine-, ten-, and eleven-year-olds, which we have grouped together as "the unknown age." There is no psychological reason why these ages should be either grouped together or unknown. The former is a matter of convenience; the latter, one of blissful ignorance.

In the absence of any recognized dividing lines between the different ages of childhood, this book follows the grouping generally used by schools. Nine-, ten-, and eleven-year-olds represent the fourth, fifth, and sixth grades commonly called the "intermediate grades" of elementary school.

The blissful ignorance which makes us call this the unknown age comes from the fact that life runs along so smoothly for these children that there is little cause to study them. Their position is a little like that of the ordinary fly—pestiferous at times, readily shooed away, and not bothersome enough to make us take constructive steps to keep them under control. Hence little or nothing has been written about them, and scientifically speaking they are truly the unknown age.

Tousled boys dash about, hollering at the top of their lungs. Girls giggle and whisper together. Both boys and girls are annoying in their own ways as they carry on their active feud against each other and ignore the grownups in their environment as completely as possible. No wonder some parents dislike their offspring intensely at this age. They are not easy to live with, but they are certainly colorful and decidedly worth studying.

SOURCES OF INFORMATION

The facts about nine-, ten-, and eleven-year-olds must be culled from many different sources, as in the case of eight-year-olds. Do not expect to find nice, concise summaries already written for you. Much of the material is hidden in books about education, psychology, physical growth, play, and child guidance—not really hidden, of course, but brought in only incidentally as an illustration of the main points about schools, psychology, or some other topic. Most of the material is so well hidden that it will hardly be profitable for you to spend the necessary hours digging it out. Some helpful reading sources are given in the references at the end of this chapter.

Once again, the children are about the best source of information about this age. Hour for hour, observation of them in different situations and at different activities is more worth while than pouring over the written sources.

Turn to the teachers, too, to find out about children this age. Watch them with the children, in the classroom and outside school. Talk with them about the characteristics of the age, and compare their comments with the things you notice during your observation.

OBSERVATIONS

Spend some time observing on the playgrounds, on the streets, at the movies, or anywhere else you can think of where youngsters this age can "act natural." Even the most informal school situation restrains the children a bit; so to get a well-rounded picture, include observations of nine-, ten-, and eleven-year-olds at home and at play as well as at school.

In school, you will find most children this age in the fourth, fifth, and sixth grades (or corresponding groups) with some in the third and some in the seventh. It is probable that you cannot give the time to observe in each of these grades. You are already familiar with the lower end of this age range from the observations you made of children in their third year in school. So, if you can spend only one hour in the classroom, choose the sixth grade. Then study your notes about the eight-year-olds to bring out the contrasts and growth changes.

PHYSICAL DEVELOPMENT

Like eight-year-olds, these nine-, ten-, and eleven-year-olds are sturdy and husky and need very little special attention. The majority of them keep up the steady gain in height and weight that has been going on since they were about five. A few girls and even fewer boys make large height and weight gains and show the other characteristic signs of approaching adolescence when they are eleven years old. These are the exception, however. The vast majority just go on gaining a little each year as they did when they were younger.

Although there is little you can notice on the surface about the physical development of these children, important changes are taking place within them, changes in glandular secretions, in certain bony structures and body proportions. We cannot observe these for ourselves, but scientists tell us that they begin in some children as early as age eight and in others as late as age twelve, that they follow a fairly regular pattern and culminate in a few years at puberty,[1] or the sexual coming of age.

At present, our knowledge of these changes is fragmentary, but studies are under way that will throw light on them. Repeated measurements of the same children from six to nineteen are accumulating and will soon give us a collection of growth curves for individual children and for different parts of the body.

For the present, we accept the fact that all children of the same chronological age are not at the same stage in their physical development any more than in their schooling.

Posture

One thing we do know about the physical condition of these nine-, ten-, and eleven-year-olds is that their posture is not so good as it was when they entered school. It is probable that their school life is largely responsible for this—too much leaning over desks, too much sitting, and not enough running, climbing, and swinging, for instance. It is not formal exercises and gymnastics that these children need to develop good posture but desks and chairs that fit, freedom to stretch themselves at will, and outdoor games and equipment in greater profusion. These things help good posture development as much as the "Hands on hips, bend, 1, 2, 3" exercises you are all familiar with. It is foolish to make children work under conditions that encourage poor posture and then to give formal exercises to correct it—a very wasteful procedure all around. It is better to adjust the working conditions and the daily schedule to the needs of the growing children in the hope of developing good posture from the start. Physical education should be an integral part of classroom and playground life and not something set apart in certain periods each week. Good posture and better general health undoubtedly result from giving attention to the details of the children's school life from the very beginning.

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[1] SHUTTLEWORTH, FRANK K., Sexual Maturation and the Skeletal Growth of Girls Age Six to Nineteen, pp. 52–54. Society for Research in Child Development, *Monograph*, Vol. III, No. 5, Ser. 18, 1938.

Whenever you see a child of the age we are interested in here, notice his posture, and see if you can tell whether it is good or poor. On what do you base your opinion? What are the probable causes? Check your opinions against the known facts, as stated by teachers or in records. What measures are being taken to help these children? It would be interesting to talk with a specialist who would explain the factors involved in posture development and the value of general athletics and corrective exercises for different types of cases.

Teeth Straightening

Notice, too, the number of children who wear braces on their teeth. Many children have their teeth straightened around nine years of age if their families can possibly afford it. Of course, not all children need to have their teeth straightened artificially; nature does the job for the vast majority. But if a child's jaw is not developing satisfactorily, if his bite is not adjusted for proper chewing, or if his teeth are crooked, the ninth year is a good time to do something about it. Like losing baby teeth at an earlier age, having one's teeth straightened may affect one's personal appearance and personality. The braces don't hurt so much now as they did when this branch of dentistry (orthodontia) was in its early stages a few years ago, but sometimes they are prominent as well as bulky and uncomfortable, and children feel very self-conscious about them. Weekly trips to the dentist's may be a part of the program for a year or so, and through them the children may develop a sense of responsibility for making and keeping their own appointments. Independence in going to and from the office also adds to the feeling of being grown up. And if several children who are friends have their teeth straightened at the same time by the same dentist, the waiting room takes on the characteristics of a meeting place for a "club." All in all, having one's teeth straightened may be quite an important experience in life.

Health Suggestions

The general health rules for nine-, ten-, and eleven-year-olds are about the same as for eight-year-olds. No special changes are necessary. Both groups need adequate food, sleep, rest, exercise, and proper clothing. Most of these are well supplied in American homes of the more fortunate classes. Rest is the outstanding exception. It seems to be regarded as of decreasing importance as children grow older, and many nine-, ten-, and eleven-year-olds are expected to keep up a hectic pace all day long, without a letdown until they go to bed at night. In a household where rest is considered not only a legitimate but a sensible way to spend one's time, these children would undoubtedly rest when they were tired, but few American homes offer the proper atmosphere for this informal type of rest, so it is best to set aside certain periods for resting. A rest period after the noon meal is still valuable for nine-, ten-, and eleven-year-olds, even though they do not actually sleep. Many children this age sleep at the after-lunch nap time, particularly after a morning of strenuous exercise. Short rest periods might profitably be introduced at other points in the day's schedule for individual children who seem to tire more easily than the average. It may not be amiss to remind ourselves again that childrden do not fight rest in and of itself; they fight only our way of giving it to them. A little ingenuity on our part, and children are glad "to rest when they are tired," as nature intends them to do. The aim of these occasional periods of solitude and quiet is to protect children from the excitement that the tempo of our modern life imposes upon them and to enable them to develop in as healthy and wholesome a way as possible.

INTELLECTUAL INTERESTS AND ABILITIES

What are these nine-, ten-, and eleven-year-olds like mentally? How far have they progressed in their grasp of world affairs? What things are they interested in, and what can they do? The answers to these questions amaze people who consider youngsters this age "just children."

James, aged ten, curled up in a chair in the living room was apparently deep in the funnies when suddenly he joined his parents' serious conversation about the *Hindenburg* disaster with "But, daddy, why won't we sell helium to the Germans?" Both Germans and helium had a meaning

Studying the early pioneer days leads to all sorts of interesting and instructive activities. (*Courtesy of the Poughkeepsie Elementary Day School.*)

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for him that would not have been possible when he was younger. And his interest did not stop with his father's answer to his question; he carried his query to school next day and looked up "helium" in the encyclopedia. He and his friends searched for facts about zeppelins and discussed at great length the relations between Germany and the United States, past, present, and future. The classroom discussion would have done credit to a grown up living room or dinner table. It was full of facts, something usually lacking in adult arguments, and it was carried on with due respect for opinions contrary to one's own, which is conspicuously absent in most adult discussions of international problems.

In some ways, these children of nine, ten, and eleven are more grown up than most grownups. They are alert, active, and curious about so many things. Their interest is fresh without a hint of the boredom or discouragement so characteristic of adults. They are avid for facts and will pore over reference books collecting facts for their own sake as well as because they throw light on a problem. Who says that children are lazy knows not nine-, ten-, and eleven-year-olds. These children are eager to learn if only teachers and schools wouldn't get in their way. They need to learn by doing, not by listening; they need to follow their own interests which are wide enough at this age, goodness knows, and not be limited to the things that adults *think* should interest them; and lastly they need to use the community as well as the classroom for their laboratory. Under these conditions, their intellectual interests are practically limitless. Nine-, ten-, and eleven-year-olds can go back in time and space. Their horizon can't widen much more unless it takes in the fourth dimension. The real intellectual difference between nine- and eleven-year-olds lies not in the things that they are interested in but in the depth of their comprehension about these things. Both ages can spend months at a time working over such problems as How New York Became a Great City or The Influence of Rome on the World or Life in Ancient Egypt. The difference in the way the two groups develop their ideas is largely a matter of ability to plan ahead. The nine-year-olds have to be confronted by an immediate situation before they can plan to meet it, but the eleven-year-olds can figure it out considerably in advance. For example, in arranging a play, the younger children will not plan the scenery until the actual rehearsals show them what they need. The older ones will decide well ahead of time and be working on it at the same time that the play is taking shape.

All three ages are at home with units of time. They know the date, the meaning of a minute, an hour, a day, or a week—at least as well as adults, which is not very accurate at best. To the usual question "What is the date today?" a nine-year-old answered all in one breath, "The twenty-first of September. It's an equinox. The sun's rays are shining directly on the tropic of Cancer"; and, what is more, he seemed to understand it. These children can fit past events in their proper sequence in a way that was not possible when they were younger. A group of eight-year-olds were not sure whether George Washington was mentioned in the Bible, but the nine- and ten-year-old children answered the question correctly without hesitation.

Most nine-year-olds have developed a reading facility which enables them to read for information and enjoyment. Although the funnies rank high in favor at this age, wild West stories, fairy tales, and adventure yarns are popular too. At eleven, some children have a reading skill equal to that of the average adult. They can read and grasp as many words per minute as a mature person, but that does not mean that they will enjoy reading the things adults read. Their interests are still childish interests, and rightly so, even if their reading ability is on an adult level.

With numbers, nine-year-olds are ready for formal arithmetic drill. They take it as a game and like it. However, they still need a great many concrete experiences to make their skills meaningful to them. Measuring wood and nails in shop and ingredients and pans in cooking and actually handling money for purchases in the school stores are some of the things that help the children see the social usefulness of the numbers and the processes that they learn by drill. Knowing how to work an example on paper is not the same as being able to do it when confronted with actual problems. A child of nine can add numbers of four or five digits as a skill, but he cannot truly understand problems using numbers in the thousands. At nine, ten, and eleven, children need both concrete experiences and formal drill in arithmetic. In the opinion of many psychologists, children this age are not ready for long division, the most intricate operation in arithmetic. In fact, there seems to be a wide discrepancy between the arithmetic curriculum offered to fourth and fifth grade children (the nine- and ten-year-olds we are talking about) and the work the children are able to grasp, as judged by the experts. Within a few years, you will undoubtedly see a change in the arithmetic textbooks of the intermediate grades. Harder problems will be put off to the later years when the children can understand what they are about and can grasp the processes more easily.

Intellectual interests and abilities are dependent on intelligence even more than on chronological age. Children of the same age differ in mental ability just as they do in their bodily equipment. The interests and abilities we have discussed here are those we have learned to expect of most nine-, ten-, and eleven-year-olds. Like other phases of growth, they are present in different amounts in different children.

INTELLIGENCE

Intelligence is important in the lives of children this age as it was not when they were younger. About this time, schoolwork begins to get harder, parents talk about plans for Junior's educational future, and Junior himself grows more conscious of the desirability of "brains" and of their distribution among his comrades. It will be helpful to know something of the mental differences between children of the same chronological age and of the influence of intelligence on personality. Don't be confused by the various terms "intellectual" or "mental development," "mental growth," "intellectual abilities," "intelligence"; all these and several others mean the same thing—behavior—which is more mental than physical. It isn't possible to separate the two completely. They both come in the same package, a human body, and are tied together with the same wrappings, a personality. Each has to be interested in the light of the other. After all, a human being is an integrated whole; and when we focus our attention on one phase of his development alone, we can no longer understand him as a person. So even though we concentrate our attention here on behavior which is more mental than physical, remember that there can be no such thing as "pure intelligence" as long as the human being who manifests it has a human body and a personality as well.

Mental Measurement

It is not so easy to measure mental growth as it is physical growth. We do not have any simple yardstick with increments of growth marked off as the pounds and inches are on the scales and tape measure. The nearest we have come to it after twenty odd years of research is what is now popularly called an "I.Q. test."

Actually there is no test that is known officially as the I.Q. test. Of the many different tests on the market today, the one that more than any other merits this title is the Stanford Revision of the Binet Test. This is an individual test, which means that it must be given to one child at a time, in contrast to a group test which can be given to a whole class of children at the same time. It is a delicate instrument, one that takes a trained person to use to the best advantage. In the hands of the wrong person, the results are as inaccurate as fever thermometer readings are in the hands of someone who can't read a thermometer—and even more likely to cause trouble.

Intelligence Tests

If you have never seen an individual intelligence test given to a child, try to arrange to see one now. Ordinarily no observers are allowed at psychological examinations, so a class or group demonstration is about the best way to go about it.

Intelligence test results should always be treated confidentially whether they come to your notice in a demonstration test or in the usual routine of school or clinic. Do not talk them over with anybody unless you have permission to do so. Great harm can be done the children and the school by gossiping about intelligence ratings. Some teachers feel that data about intelligence tests and I.Q.'s should not be given to parents or students. One thing is certain: schools are going to give this information only to people whom they can trust to maintain a high standard of professional etiquette.

How to Figure I.Q.'s

There is more to estimating a child's intelligence than just giving a Binet test like the one you will see demonstrated. From these results, an I.Q. must be figured and then interpreted in the light of the child's personality.

The following information is needed to figure an I.Q.: the child's birth date and the date on which he was tested and the results of the test. From the dates, you determine his chronological age (C.A.) at the time of the test; from the test results, you (or the psychologist) add up his mental age (M.A.). Then you reduce both to months and divide his M.A. by his C.A. to get his I.Q. Try a few examples yourself to see how it is done. Suppose John was born Oct. 10, 1929, and a test given on Dec. 16, 1938, showed his mental age to be 10-4. What was his I.Q.?

Ideally, several Binet tests should be given to the same child a few years apart, and some sort of average obtained from the I.Q.'s on all these tests. This is the way I.Q.'s *should* be obtained. Unfortunately, they are seldom based on such accurate findings. Any one of a number of other tests may be given, tests whose accuracy is not so well established as the Stanford Binet. The examiners may not be sufficiently experienced or trained to get the best out of even a questionable test. Inexperienced examiners may overlook errors in figuring chronological age or in adding up mental ages.

If I.Q.'s are found in this way, the chances of their being inaccurate measures of mental ability are very great.

Furthermore, a child's intelligence is all mixed up with his knowledge and his personality. Even the best test can't separate them, or the most skilled examiner disentangle intelligence from the other two. It is logical, then, to expect that school training and home conditions should influence whatever it is that intelligence tests measure. The surprising thing is that the effects are not greater or more apparent. But they do exist and must be reckoned with in interpreting the test results. An I.Q., then, is a measure of intelligence plus knowledge plus personality.

How to Interpret I.Q.

In the light of these considerations, what does an I.Q. mean? It tells us the child's mental age at the time he was tested and the rate at which he is developing mentally. Whether this is the rate at which he developed last year or will develop years hence is still an open question. Evidence has accumulated over the twenty-five years that the Stanford Binet test has been in use that indicates that, in the large percentage of the cases, a child's I.Q. remains practically the same from year to year. Recent experiments have yielded conflicting results, so the controversy over "the constancy of the I.Q." is as alive as it ever was. In the face of this uncertainty, there is one thing we can set down as a general principle: Never regard any I.Q. as the final word about a child's intelligence. An accurate I.Q. is a great help but only a help in understanding the child's personality and determining what he can do in school. Far too often it is regarded as the be-all and the end-all, and other efforts to evaluate his ability and his achievement are neglected.

How to Classify I.Q.'s

There are a few generally accepted I.Q. classifications that it is worth while to know. I.Q.'s of 90 to 110 are considered average; those below 70, feeble-minded; and those over 130, gifted.

Children with average I.Q.'s have the intellectual ability to make average progress through high school. Whether they will do this easily or not at all depends on other factors. Illness, absence from school, unhappiness at home may interfere; or dogged determination, ambitious parents, or just plain hard work may be rewarded with better than average marks.

I.Q.'s below 70 have difficulty with schoolwork almost from the beginning and usually drop out of school as soon as the law allows. These children do not have the intellectual ability to grasp the work of the regular fifth grade, so their school progress stops there if not before.

I.Q.'s over 130 have few if any limits on their intellectual achievement. They can grasp the abstract work of college and university. Law, medicine, and the other professions recruit most of their personnel from those whose I.Q.'s are over 130.

This, then, is what an I.Q. means. It tells us what a child *can* do intellectually. It does not tell us what he *will* do in this or in any other line. Success in school, in college, or in life is contingent upon health, personality, home influences, and many other things as well as on intelligence. A child with a high I.Q. may be too unhappy and shy to do justice to himself, whereas a bright, self-confident child may use his limited ability to the utmost and go further than the child with more brains.

Perhaps you remember being tested when you were in school, and maybe you know your own I.Q. You may know the I.Q.'s of some youngsters in your family or your neighborhood. Consider these results critically now that you know more about intelligence tests, and see whether you think the I.Q.'s are reliable and accurate measures of the abilities of these people. Be on the alert for two I.Q.'s for the same child that differ more than the allowed five points, and see if you can discover the reason. Always be critical of I.Q.'s that come to your knowledge, and evaluate the means by which they were obtained before you accept them. Not all I.Q.'s are equally valuable, and one must learn to separate the wheat from the chaff.

Other Estimates of Mental Ability

Few schools have Stanford Binet I.Q.'s for more than a few of their puplis. These tests are too expensive to give to the whole child population and are usually reserved for children who come to the attention of parents, teachers, and principals for one reason or another. The school in which you are observing probably has some sort of intelligence test results for most of the children, and it is to be hoped that some of these will be made available to you.

One interesting assignment is to see how nearly you can pick out the brightest and the slowest five children in any group without the aid of test results. Observe the group for awhile. Make up your lists, and give the reasons why you rate each child as you do. What did a child say or do that seemed indicative of mental ability? Compare your lists with those made by your fellow students. On which children did you agree and disagree? Why, do you think? Study the intelligence test records of these children, and see how accurately you estimated each child's ability. How much were you influenced by one outstandingly good or poor answer? In our daily conversation, we all too freely and inaccurately label people "bright" or "dumb." An exercise of this kind should demonstrate the fact that one bright remark does not make a genius or one slow answer a dumbbell. It takes the results of intelligence tests to help us estimate mental ability with even a fair degree of accuracy.

SEX DIFFERENCES

Boys are boys and girls are girls at this age. They don't play together so much as they did when they were younger. Their behavior and interests are increasingly different. Girls retire to the house and play in more ladylike fashion. Boys "wrastle" and indulge in more tomboyish activities than ever. Part of this difference is obviously due to the way children are treated when they are young.

Parents expect different things of their sons and daughters even at an early age. Boys are not allowed to cry; girls are expected to. To play with dolls is sissy; to climb trees is tomboy. In countless other ways, standards of conduct are different for boys and girls from babyhood. Indirectly children learn, too, what is expected of men and women in the home and in the world. Daddy is the one who makes the money; mother does the shopping. Father leaves things around; mother cleans up. Mother can't open windows and doors that stick; a strong man has to do that. By these daily incidents we teach children different patterns of behavior for the two sexes. Slowly this consciousness that boys and girls are different, not only in the way that they are made physically but in the way that they must behave, takes root; and at the ages of about nine, ten, or eleven, it creates a

"Wrastling" is a very friendly activity, characteristic of nine-, ten-, and eleven-year-olds. (*Ewing Galloway.*)

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rift between the sexes which manifests itself temporarily as antagonism.

Notice the difference in the reactions of boys and girls to being hurt. Most girls don't like rough-and-tumble games at this age. They drop out at the slightest physical injury, like a kick on the shin or a scratched finger. As one teacher puts it, "girls tend toward femininity," which is to say that they don't like to be mussed up and that they grumble over minor physical ailments. Boys, on the other hand, don't know when they are mussed up, it is so much their usual state; and with physical hurts, they act the big he-man and pretend not to notice them.

Look for other illustrations of these sex differences between boys and girls. Notice how both sexes like to put their hands on their pals but in different ways. Girls put their arms around each other; boys substitute with punches. This is the age of "wrastling," as the boys call it; and in spite of its outward appearance, it is a very friendly activity. The attitude of boys toward it is illustrated by the following comment of a ten-year-old. When asked by his mother what he and his pal were doing during an afternoon, he answered, "The first part of it we were enemies; we fought; the last part of it we were friends; we wrastled."

Follow a group of boys walking along together, and see how many times they attack each other in friendly fashion and what forms these attacks take. Watch a group of girls, and see how their reactions to each other differ.

Discuss with your friends the things that were said and done in your homes that might explain the differences between the ways boys and girls act at this age. How much do you think these differences are born in children, and how much bred by the civilization in which they live?

SEX ANTAGONISM

The separation of the sexes may begin as a peaceful drawing apart due to lack of interest in the same things, but it eventually becomes an active antagonism between boys and girls which colors their lives and activities to a considerable extent when they are nine, ten, and eleven years old.

There is a perpetual feud between the boys and the girls at this age. Such phrases as "Don't let's ask him; he's a boy" or "We don't want her; she's a girl" illustrate the antagonism between the sexes that is characteristic of nine-, ten-, and eleven-year-olds. Boys prefer the company of boys, and girls of girls, at every possible opportunity. Boy and girl games, parties, and informal gatherings are seldom successful at this age. The antagonism is so powerful that it drowns the cooperative spirit, and things inevitably end in a contest, a fight, or a complete separation of the sexes.

The ways in which this sex antagonism shows itself are apparently limitless, and you will find it an amusing pastime to make a list of the incidents you see in your observations. Notice how the boys and girls distribute themselves on the playground or in the house at home—boys in one place and girls in another. For a while they play separately, but eventually one or the other bursts forth into some activity calculated to annoy the other group.

Four ten-year-old girls formed a "Spy Club" whose chief object was to spy on the boys. They followed the boys, snooped into likely meeting places in the woods, and chanted with maddening persistence, "We see yuh! We see yuh!" The boys, in their turn, massed outside Barbara's house where a social gathering of the girls was in progress and shattered the peace of the neighborhood with loud shouts: “Barbara Dale is a garbage pail” and “Judy Pace has a nut face.”

All this is part of the zest of life to these youngsters. They like the excitement of having an enemy, the feeling of solidarity with those on their side, and the fun of perpetually conniving to outwit the foe. It would be a shame to spoil it by making these children act like ladies and gentlemen too much of the time. Like so many other annoying activities of children, this sex antagonism is but a passing phase of social development, and in a few years the same boys and girls who jeer at each other will be exchanging soft words and courting each other’s favors. It is distinctly an intermediate stage between the utter lack of sex consciousness of young children and the exaggerated sex consciousness of the adolescents. To five-year-olds, children of the opposite sex are first of all children and second boys and girls. To fifteen-year-olds, they are primarily boys or girls and only secondarily human beings. But to ten-year-olds, they are boys and girls first and always, and their status as human beings is hardly acknowledged.

CLUBS

The Club! How often do we hear this phrase when in the company of nine-, ten-, and eleven-year-olds. “Jane belongs to the club”; “John isn’t in the club”; “The club meets this afternoon”; “We can’t tell; it’s a club secret.” These and countless other expressions show the place that clubs hold in the lives of children at this age.

We must not think of these clubs as small editions of the adult type of club. The children’s are hardly clubs at all; they are more like the thing adults recognize as “our crowd” —small informal groups, with membership constantly changing. They meet as occasion arises, with no other aim than to enjoy each other's company. There is seldom need for all the paraphernalia of a real club—a name, a constitution, a purpose, officers, and a treasury. The advantage of the loose form of organization is that it can be so easily altered to meet changing ideas and personalities.

A few examples will show how these clubs of the nine-, ten-, and eleven-year-olds fit the needs of the children. An eleven-year-old girl when questioned about the club she was interested in at the moment gave the following description. "The club doesn't have any name. Can't you understand that we don't usually have names or officers or anything like that? There are eight of us in the club right now, all girls of course. Three of us got it up. We take in the ones who go together. We never put anybody out; they just leave us. Once we wanted to get rid of somebody, so we did things she didn't like, and she got mad and went out and told everything. Then we had to form a new club. We always have secret ideas and passwords, and the most fun is to initiate somebody. At club meetings, we sit around and talk or play games and have eats. We don't have a president or a leader; we just combine our ideas and use the best ones."

A group of ten-year-old boys joined the Junior Birdmen Club and proudly wore their pins and gathered in a secret meeting place. Beyond that, nothing much happened; and amusingly enough, it developed that none of the members knew what Junior Birdmen stood for, and they didn't seem to care. After a while, this club merged into the Detective Club in which the youngsters stalked about playing detective, taking fingerprints, etc. Goodness knows how many other clubs this same group of boys have lived through in the year since they were birdmen and detectives.

A more advanced type of club organization is shown in the following illustration offered by a college student. "When we were in sixth grade, we had a Pig Club, with eating as its chief aim. Meetings were held once a week in somebody's back yard. There was a president, a vice-president, secretary and treasurer, and about three members. Minutes were kept, and the meeting proceeded in parliamentary order. After reading of the minutes and any other business, we would pool our money and elect two girls to go to the store and get as much penny candy as possible with the money on hand. We did have a vague idea of giving a fair, but how we were going to organize it and what we were going to do with the money was all very vague. The club didn't last many weeks, and the greatest fun we had was in thinking it up and initiating people into it." (M. V.)

Illustrations of this kind could be duplicated endlessly, because the clubs themselves are numerous and found almost everywhere. It is an unusual environment that does not foster the formation of clubs with children somewhere around the ages of nine, ten, and eleven.

A club often has a wide range of ages in it. The membership is determined in no small measure by the neighborhood supply of children and the similarity of their interests. The type of organization for the club is likely to follow the pattern with which the youngsters are familiar from adults or older brothers and sisters. The course of the club's activities is largely directed by a leader from within the club. In spite of the many forms that these clubs take, there are a few points of similarity in them all. Of some things we can be sure: There will be whispering, mysterious conversation, many secrets; there will be imposing names and purposes and plans that never materialize; there will be disagreements, bust-ups, and reorganizations; there will be grudges, heartaches, and revenge. It is all a part of growing up, of learning to live and work with other people. Unfortunately it is a stage out of which many people fail to grow.

Far too many go through life on the nine-, ten-, and eleven-year level of club organizations and relationships. The troubles that beset even the best of clubs at one time or another in their careers bear testimony to the fact that few members are grown up all the time and that some aren't grown up at all.

An interesting comparison could be made between the clubs of nine-, ten-, and eleven-year-olds and high school and college sororities and fraternities or women's clubs and men's fraternal organizations. There are points of similarity in them all. Select any club you are familiar with, and analyze it. What do people get out of it? Who is the real leader, and why? How are the members selected? What constitutes a "good meeting"? What makes an unsatisfactory one?

Club membership is one of the great American sports, and yet we don't really understand its whys and wherefores. We know little or nothing about group membership or leadership, often joining an organization for no other reason than that it is the line of least resistance. A study of the club life of the nine-, ten-, and eleven-year-olds throws light on many points about group membership that it would be well for us to understand.

NINE-, TEN-, AND ELEVEN-YEAR-OLDS AS PEOPLE

Nine-, ten-, and eleven-year-olds are apparently taken for granted. To most people, they are simply children.

When the child study specialists write about this age, they call it postprimary or preadolescent, implying a sort of in-between age of slight importance compared with the ages on either side of it. When parents talk about it, they do so with an air of resignation, implying that "it is a pretty terrible age, but thank Heaven it won't last forever." Neither specialists nor parents seem to be interested in this age for its own sake. Against this point of view we protest. Nine-, ten-, and eleven-year-olds *are* people, too.

Personal Appearance

Let's take a look at a group of these youngsters as they come dashing into the house after play. "Mom, can we have some eats?" demands the host and leader. His pants are hanging down over his hips till it seems as if they would drop to the floor at the slightest bump. His shirttails fly in the breeze. Hands and face are smeared with dirt. But why go further in this description? Just look at any ten-year-olds who are having a good time, and you can see for yourself "why mothers grow gray." Watch these youngsters when, at adult instigation, they tidy themselves up. Halfheartedly they tuck their shirts in their shorts, make a pass or two at their hair, and wipe their hands on anything that's handy. Then, with an air of "There, that's done," they hurry on to more important things looking just as bad as ever. Boys are worse than girls about keeping themselves neat, but girls aren't anything to brag about. Personal appearance just isn't important to children at this age. In fact, it is of decidedly questionable importance to dress up like acceptable human beings. One nine-year-old was given his choice of washing his face and putting on a clean shirt to come to the family table or eating by himself in the breakfast nook just as he was (except for hand washing which was an accepted part of mealtime routine). He chose to eat alone—getting tidied up was just too much bother! Let's not judge the youngsters too harshly—how often we feel the same way ourselves. And let's not worry that these children will grow up to be sloppy men and women. In a few years, when adolescence is upon them, they will make up for all the grooming they aren't doing now. Like so many other annoying things, this lack of interest in personal appearance is but a passing phase.

Strenuous Activity

One reason these youngsters can't keep themselves neat is that they are always hurrying somewhere. And hurrying certainly does muss one up. They dash breathlessly from place to place, never walk where they can run, never run where they can jump or do something more strenuous. Fifth, sixth, and seventh graders have the reputation of being the worst behaved children in school. They are always running through the corridors knocking people down, and it is hard to subdue them. Teachers and principals forget that nine-, ten-, and eleven-year olds have lots of physical energy which must be used somehow. It just isn't possible for these children to walk quietly or "act nicely" when they are bursting to let go.

Noise

And when they do let go, how noisy they can be! A ten-year-old in the household plus a large yard means *noise* and lots of it. Mrs. Jones is concerned lest the neighbors complain of the shouts, yells, and bicycle sirens of the youngsters who congregate in her yard every day. Both boys and girls dash about, climb everything in sight, and yell most of the time. Often the girls drop out of the play from fatigue or lack of skill or because activities in the house interest them more. But both sexes like noise; there can be little doubt about that.

A student in a woman's college confesses that "at that age my greatest joy was to follow the college band because although its music was not of the finest, it so completely filled the surrounding air." (C. M.)

The keen enjoyment that these youngsters take in noise is one of the things that makes them so hard to live with. Most adults feel that there is more than enough noise in the world already and are unsympathetic with the children's attempts to add to it.

Attitude toward Adults

Another reason why we aren't drawn to children of this age is that we mean so little in their lives. They really aren't the least bit interested in grownups and would ignore us completely if they could. "John, get up and give your chair to Mrs. Harris; why can't you remember without being told?" The reason is that he hardly knew that Mrs. Harris was there, the comings and goings of adults are of so little interest to children of this age. One frank young nine-year-old when reminded by his mother that his aunt was leaving before he could see her again put the situation in a nutshell, when he answered, "All right, what do I care?" Most youngsters don't dare be so frank as that, but they feel the same way. It is up to us to face the fact that our popularity is on the downward swing when children are nine, ten, and eleven years old.

In our turn, we look with disapproval on the silly antics that seem to give these youngsters so much pleasure—the giggling, hilarious laughter "over nothing"; the secret languages with which they delight to mystify us; their roughhouse; and their practical jokes. It may be fun to enter into the spirit of these things occasionally, but to have them for a steady diet is hard on the most understanding of us.

A little study will show you that children of nine, ten, and eleven *are* people—not people we should enjoy living with if we had our choice but people, nonetheless. Our attitude toward them is colored by their attitude toward us, which isn't very flattering, but this fact should not be allowed to influence our estimate of these youngsters. After all, this is a scientific inquiry. We are trying to find out what these youngsters are like, not how much they like us.

IN THE FAMILY

Let us see what these children are like at home, in the bosom of their families, as it were.

Nine-, ten-, and eleven-year-olds are quite grown up and in most homes are full-fledged members of the family. No longer is it necessary for them to have special food at special times. They follow the regular family meal schedule with a few extra snacks thrown in. Their bedtime is still a bit earlier than that of the grown-up members of the family; but on special occasions, they stay up along with the rest. Their leisure time is theirs to use as they will with certain limitations. Younger children ask permission, "May I go over to John's?" This age says, "I'm going over to John's; is that all right?" Most parents don't know just what their children *are* doing at this age. The children themselves make their plans and carry them out, notifying their parents only when something unusual arises.

Children this age *can* take care of their own rooms and their persons and help with the chores about the home. They probably won't do these things consistently except with supervision or special motivation, but they are physically capable of being a great help around the house. Each child should be secure in the affections of the others, sure of his place in the family group. By the time a child reaches this age, he should feel that it is his home no less than mother's or father's or baby sister's—his to use and to keep up. Some things the family share; others belong to individual members; and his precious treasures are his own, respected, if not appreciated, by the others.

For the peace of all concerned, it is wise to let each child this age have a room of his own if it can possibly be managed. Pets, collections, weird instruments, and innumerable other things complicate life immeasurably for roommates. It is easier on everyone in the household if the care of these is vested in the owner. No one else can share his or her affection for these dust catchers.

Nine-, ten-, and eleven-year-olds need not only a place to keep their things but a place to bring their friends. They don't need a special room for that or even a yard, but they do need to feel that their friends are wanted and welcome—in other words, that it is their home in which to entertain just as older sister or mother and father entertain.

In ways like these, children learn the give and take of home life, taste the pleasures as well as the drudgery of being a member of a family group. At nine, ten, and eleven, they are ready and eager to be treated with the same consideration that the other grown up members receive and no more. Adults must look beneath the surface of these boisterous youngsters and be sympathetic with their fumbling attempts at independence. The gang is beginning to be more important than the family, which should not hurt our feelings once we recognize it as a natural stage in the process of growing up.

Discipline should not be a problem with children this age. Instant obedience is no longer desirable, if it ever was. Even the most ardent devotees of spanking admit that ten-year-olds are too old to be spanked. When they *do* get into trouble, which still seems far too often as judged by adult standards, they can profit by the same kind of treatment that adults receive. Natural consequences do the trick in most cases. Artificial punishment is seldom necessary or desirable. Children this age should make many of their own decisions, face the consequences of their mistakes, and thereby learn the self-control that no amount of adult dictation and punishment can ever give them.

Between brothers and sisters there will be teasing, rivalry, fights, but these don't really matter. They may be a sign of the sex antagonism we spoke of earlier in this chapter or a part of the normal friction of family life.

This is the age when boys ask their mothers not to kiss them in front of other boys. They want to appear big and grown up; but we should not be misled—they need affection just the same. Kissing is not the only way to make a person feel that he is loved—a pat on the hand or a look does just as well. It is not the caress that counts but what lies behind it, that subtle psychological something, intangible, but nonetheless real in all human relationships.

Study the families you know well. How can you tell whether there is a wholesome relationship among the members? What do the parents and children do and say that seems indicative of their respect for each other? Discuss these things with your friends and with your own family. The subject is of fundamental importance even though it is hard to put your fingers on.

If you know some families with nine-, ten-, and eleven-year-olds in them, study the way the children are treated at home. How much independence do they have? How much responsibility? Is there nagging or fighting or scolding? These and countless other things give you insight into the status of these children in their family circles.

SUMMARY

This is not a complete picture of nine-, ten-, and eleven-year-olds. There is much more that we should like to know about them. What are their favorite games, books, and movies? What are their interests in the creative arts—woodwork, clay modeling, painting, and music, things we have unfortunately not found space to discuss at any age level in this book? Other points of interest will undoubtedly occur to you; and if your time allows, you might select one or more special topics for intensive study. The results would be a valuable contribution to our understanding of an age about which we know all too little.

We have seen that these youngsters are at a boisterous, noisy stage in their development. Healthy, active, and full of vitality and ideas, they dash about, brushing adults aside as unworthy of notice, in their zest for adventure. Boys and girls draw apart during this period, no longer interested in the same things. Intellectually, they have wide interests and abilities. Some of them have developed a reading skill and general mental maturity which is close to the adult level. As people, they can be independent and capable in spite of their disheveled personal appearance.

These children have come more than half of the way from babyhood to adulthood. Call to mind the babies you saw at the beginning of your study. Think over the growth changes that have taken place. From one stage of childhood to another, these children have grown and are growing, each age a steppingstone from the ages that have gone before to the ages that are to come.

No picture of growth and development can be complete without nine-, ten-, and eleven-year-olds, and it is indeed unfortunate that so little has been scientifically established about the characteristics of the age.

REFERENCES

LIST I

Anderson, John E.: *Happy Childhood,* D. Appleton-Century Company, Inc., 1933.
    Chapter IV. Stress and Adjustment. pp. 37–48.
    Chapter VI. Fear and the Quest for Security. pp. 69–83.
    Chapter VIII. Self-control and the Quest for Dominance—Discipline. pp. 96–113.
    Chapter XI. Intelligence and the Quest for Knowledge. pp. 138–152.
    Chapter XII. The Quest for Social Esteem. pp. 153–168.
    Chapter XVII. Gifted Children. pp. 236–250.
    Chapter XVIII. Handicapped Children. pp. 251–268.

Bailey, Edna W., Anita D. Laton, and Elizabeth L. Bishop: *Outline for Study of Children in Schools,* McGraw-Hill Book Company, Inc., 1933.

Chapter V. Outline for Study of Child in Elementary School. pp. 76–132.

Bain, Winifred E.: *Parents Look at Modern Education*, D. Appleton-Century Company, Inc., 1935.
Chapter VII. Basic Subjects in the Modern Curriculum. pp. 133–155.
Chapter IX. The Organization and Equipment of the Modern School. pp. 190–215.
Chapter X. Tests, Records and Reports. pp. 216–246.

Foster, Josephine C.: *Busy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter VII. Play of the Intellectual Type. pp. 131–148.
Chapter VIII. Participation in the Family Activities. pp. 149–169.

Morgan, John J. B.: *Child Psychology*, Farrar & Rinehart, Inc., rev. ed. 1934.
Chapter III. The Child's Adjustment to His Family. pp. 72–103.
Chapter V. Emotional Development. pp. 144–179.
Chapter VI. Motivation. pp. 180–214.
Chapter XIV. Intelligence. pp. 427–451.

Strang, Ruth: *An Introduction to Child Study*, The Macmillan Company, Inc., rev. ed. 1938.
Chapter XVIII. Development in the Postprimary-preadolescent Period. pp. 437–482.
Chapter XIX. Learning in the Postprimary-preadolescent Period. pp. 483–507.
Chapter XX. Special Problems of the Postprimary-preadolescent Period. pp. 508–540.
Chapter XXI. Child Study and Guidance in the Elementary School. pp. 541–582.

Stuart, Harold C.: *Healthy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter XIII. Control of Environment. pp. 281–296.

LIST II

Baker, Clara Belle, director of the Children's School, and other members of the staff: *Curriculum Records of the Children's School*, Bureau of Publications, National College of Education, 1932.
Units of Work in the Fourth Grade. pp. 151–184.
Units of Work in the Fifth Grade. pp. 185–215.
Units of Work in the Sixth Grade. pp. 216–246.
English Records. pp. 319–344, 374–400.
Arithmetic Records. pp. 423–449.

Cunningham, Bess V.: *Family Behavior*, W. B. Saunders Company, 1936.
Chapter I. Families and Family Behavior. pp. 19–44.
Chapter II. How Shall We Study the Family? pp. 45–80.
Chapter VI. Working and Sharing Income. pp. 173–209.
Chapter IX. Maintaining Healthy Minds. pp. 295–333.

Fisher, Dorothy Canfield, and Sidonie Matsner Gruenberg, ed.: *Our Children*, Viking Press, Inc., 1932.
Chapter XVI. The Family Drama. pp. 169–181.
Chapter XIX. Measuring Children's Capacities. pp. 204–213.

Glover, Katherine, and Evelyn Dewey: *Children of the New Day*, D. Appleton-Century Company, Inc., 1934.
Drama of Growth:
  The Mental Instrument. pp. 90–109.
  Emotional Development. pp. 110–127.
The World They Live and Move in:
  The Home in Transition. pp. 173–189.

Goodenough, Florence L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.

Chapter XIV. General Intelligence and Its Measurement in Early Childhood. pp. 293–323.

Chapter XVII. Bright and Dull School Children. pp. 393–410.

Chapter XIX. The Development of Personality and Character in Later Childhood. pp. 434–462.

Jennings, H. S.: The Biological Basis of Human Nature, W. W. Norton & Company, Inc., 1930.

Chapter VIII. Recent Transformation of the Knowledge of Heredity and Development; Its Bearing on Interpretations of the Individual and His Characteristics. pp. 186–202.

Chapter IX. Biological Fallacies and Human Affairs. pp. 203–222.

Chapter X. What Can We Hope from Eugenics? pp. 223–252.

Rand, Winifred, Mary E. Sweeny, and E. Lee Vincent: *Growth and Development of the Young Child*, W. B. Saunders Company, 1934.

Chapter IX. The Home and Family as a Background for Growth. pp. 327–357.

Chapter X. Family Relationships. pp. 358–391.

Zachry, Caroline B.: *Personality Adjustments of School Children*, Charles Scribner's Sons, 1929.

Chapter I. The Troublesome Child. pp. 8–86.

Chapter III. The Child with a Polyglandular Difficulty. pp. 121–183.

8 . . . Early Adolescence

TWELVE-, THIRTEEN-, AND FOURTEEN-YEAR-OLDS

"THESE children are certainly growing up." This familiar expression characterizes the twelve-, thirteen-, and fourteen-year-olds very well. Sometime in these three years, most of them shoot up in height and blossom forth with the bodies and manners of men and women. Not overnight do they "put away childish things," but slowly the changes come about, and in this three-year period they make a good start toward manhood and womanhood. The end of the period finds most of them halfway there, not really grown up and not children either. We call it "adolescence."

ADOLESCENCE

There is a baffling vagueness about the definition of adolescence. The commonly accepted statement that it is a period of ten years or so between childhood and adulthood isn't really very helpful, because no one can say when childhood ends or adulthood begins. Childhood ends when the individual is capable of reproducing the species, but at present there is no known way of establishing this point except by having a baby. The signs that we have been accustomed to accept as indicative of sexual maturity have recently been questioned without giving us other criteria for determining the end of childhood. So now we are at sea more than ever about how to recognize puberty (the earliest age at which a person is capable of reproducing) in either a boy or a girl. Nor do we know just what "adulthood" means or when it begins. There is no point at which we can say with certainty, "This person is now an adult." The law recognizes eighteen years for girls and twenty-one for boys; but from the psychological and physiological angles, the situation is not so simple. In the absence of scientific information, we have to be satisfied with the rather general idea of adulthood that most of us already have.

In fact, we have to be satisfied with general age limits for adolescence, anyhow. Somewhere between twelve and twenty, most children pass through this period of growth. The age at which it begins and ends varies with different individuals. Some children may be adolescent from eleven to sixteen; others, from fourteen to twenty. There are such wide variations that one chronological age represents many different stages of growth, and averages have little meaning.

However, adolescent years, whichever they may be, are important links in the chain of growth from seed to saplings. Once again, we are faced with the problem of how to group the ages. Twelve-year-olds are in another transition year, apparently, almost as the eight-year-olds are. Some authorities include them with the younger children; others, with the older ones. Which should it be? No one really knows. So in the face of this uncertainty, we follow the grouping used by modern schools and put twelve-, thirteen-, and fourteen-year-olds together. This cuts through the approximate middle of adolescence, just as junior and senior high schools do. Twelve-, thirteen-, and fourteen-year-olds, to whom this chapter is devoted, are regularly found in seventh, eighth, and ninth grades, in junior high school. The fifteen-, sixteen-, and seventeen-year-olds, considered in the next chapter, represent the last three years of high school. This division is not one of psychological or physiological significance. It is largely a matter of convenience. In grouping children according to school organization, students can arrange their observations and study of the curriculum to the best advantage.

SOURCES OF INFORMATION

Much of the material about adolescence covers the span of growth as a whole and does not divide it as we do here. The written sources of information are therefore largely the same for our two age groups. You will have as much difficulty exhausting them as you had finding any material at all about the nine-, ten-, and eleven-year-old children. Either feast or famine seems to be the order of the day. No books at all about the younger children, and twenty or more about the adolescent. There is no limit to the amount of time you can spend reading, but be sure to read critically. Contradictions, confusions, and speculations are mixed in with scientific conclusions.

Probably before this book is very old, a wealth of new material will be available. At the time of writing, a number of important studies of adolescence are under way. The universities of California, Minnesota, Harvard, and Yale, the Progressive Education Association, and the American Youth Commission are among the organizations conducting investigations. Impressive research programs these are, studying every phase of development, making repeated measurements of the same children over a period of years so that when the results of them all are gathered and pooled, we should have a pretty complete picture of the way children grow and develop during these years.

The vast number of studies and the detail with which each one is being conducted seem marvelous to the uninitiated. These are no mere studies of height and weight and other observable growth changes. They include such obscure things as the growth of the wristbones as revealed by X-ray pictures, changes in metabolic rate at different ages and under different conditions, increments of mental growth, social adjustment to the opposite sex, and the psychoanalytic interpretation of adolescent behavior. There isn't much that the scientists have missed. Not only are these studies broad in their scope, but they are long in their continuous study of the same children. The Harvard Growth Study, for instance, began in 1922 with all the children in the first grade in a Massachusetts city and followed these children for twelve years or so, as long as they were in school. Some day soon, these data will be interpreted and made available to child study students.

In the meantime, we have at our disposal the results of many cross-section studies of adolescence. In these, the scientists measured large numbers of children of different ages at one sitting, as it were, instead of following a small number for many years. Cross-section studies produce quicker results and indicate the average growth expected at different ages, but they do not help us understand the stages by means of which individual children arrived at these mileposts. We must await the results of the present growth studies to give us this information.

OBSERVATIONS

Even with all this scientific material, we still need to make our own observations of the children themselves. Nothing makes the topic of adolescence so alive as a real live adolescent. So plan to divide your time between reading and observing the children in school and in their homes.

Before you begin your observations, glance over the suggested techniques for studying children,[1] and refresh your mind with the different methods and their uses. Even the best of us fall into habits of record taking which should be checked at intervals for their scientific value and for their suitability to the problems at hand. The best methods to use for studying adolescents are not those you used with babies and preschool children. Older children are quick to recognize when they are being observed, and it is doubtful whether you will get a true picture of the age if you sit on the side lines with your notebook, as you could in a nursery school. You can perhaps enter into the games and conversations of these older children and get much of your information that way, or you may question the youngsters directly. Much will depend on how accustomed the teen-age children are to being studied. There is more than one right way to get the information you want; and at each age level, it is wise to give thought to selecting the one that seems best adapted to your problem.

In school, you will find these children in a wide variety of grades. Those who are just "at age for grade" will be in the seventh and eighth grades of grammar school and the ninth grade in high school. In some places, these grades are grouped together in a separate building as a junior high school. No longer do all children in a grade take the same subjects. They choose from a wide assortment of languages, sciences, and vocational subjects the ones that best fit their future plans. The junior high school itself is larger than the elementary school; there are more children and teachers to whom each child must adapt himself. In greater or lesser degree, the work is departmentalized, which means that different teachers teach different subjects. For some children, going to junior high school is almost as big a step as entering kindergarten. Work out your schedule of observations to enable you to see these children in several different situations. The less formal the situation the more you will learn about children as they really are. In classes where most of the time is spent in studying, reciting, or passively listening, extended observation is hardly profitable.

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[1] Appendix II, p. 291.

However, you should spend at least one hour observing in a classroom so that you will be able to appreciate how this particular school is influencing the lives of the children you are observing. Think of all the other places about the school building where you will see the children—in the hallways between classes, in the cafeteria, the washrooms, on the playground, and in the inevitable candy store across the way. Outside the school program, the possibilities for observing these children are unlimited. Try watching a dancing class, a session of Sunday school, a back-yard ball game, a crowd at the movies; or just sit on the stone wall as the school bell rings, and see the youngsters pour in or out.

It goes without saying that you should see these children in their homes, too, and with their families. After all, home influences are more important than schools. Study your own younger brothers or sisters or nephews or nieces or those of your friends. If children this age aren't close at hand, make friends with any youngster, offer help with his work or his hobby, and you will thereby make the opportunity to see him in his home. No picture of this age is complete without some information about the way youngsters are treated by their parents and their brothers and sisters.

COMPARISON OF TWELVE- AND FOURTEEN-YEAR-OLDS

Let us study a group of children who have just had their twelfth birthdays and compare them with the same number of children who are about to have their fifteenth. These two birthdays include the years twelve, thirteen, and fourteen and mark the beginning and end of the period of growth we have included in this chapter. We shall have to make this comparison in our heads, because there are few natural opportunities to see two similar groups of children in the flesh. Some readers may be able to think up a way to assemble these birthday children. A contest, a party, or some similar gathering would offer a most interesting opportunity to study these ages informally.

Twelve-year-olds

Suppose you could literally line up five boys and five girls within a few days of their twelfth birthdays; what should you notice about their development? There would be the usual differences in height and weight and coloring and facial expression that you find in a group of children of any age. These twelve-year-olds are on the brink of adolescence, as it were. How will they look and act? The girls will be a little taller and heavier than the boys, and perhaps one or two of them will show small breasts and hips under little-girl dresses. The rest of the girls and all of the boys will not look very different from eleven-year-olds. You probably couldn't tell the two ages apart if you saw them playing together. Their bodies have the characteristic proportions and contours of childhood and not of adolescence. A few of them have "begun to change," as the saying goes, but most of them are a year and a half to two years away from the beginning of their adolescence. At twelve years of age, they are more alike than they will be in a few years, and most of them are quite definitely still children.

If after standing "at attention" in line, you told them to "break ranks," their behavior would be characteristically childish. The antipathy that we noticed in the younger children would still be prevalent. The boys and girls would separate and perhaps make fun of each other. The boys would probably roughhouse, "wrastle," and perhaps scrub around on the floor. The girls would gather and whisper together, arms around each others' necks. Boys and girls might join each other to "see something"—a badge or a trick puzzle or what not—but they probably wouldn't be drawn to each other merely for conversation or because they enjoyed each other's company.

Fourteen-year-olds

Suppose, now, that you line up the fourteen-year-old boys and girls and look them over. What should you see?

The individual differences noticeable at any age are less apparent than the differences in the stage of their adolescent development. Probably none of the girls would look like the twelve-year-old children; all of them would have changed more or less toward being grown up. One or two would be quite mature in body and sophisticated in manner and dress. More of them would be in between, with a hint of developing breasts and hips. Approximately nine-tenths of the girls show the characteristic changes by the end of junior high school, which is about the fourteenth year for most of them.[1]

The boys are not so advanced as the girls; that is apparent at first glance. Most of them may be as tall as the girls, but probably none of them will be so mature in body and manner as the most mature girl. There is one tall handsome looking youth whose body has begun to fill out in line with his height. He is nicely groomed and seems conscious of the impression he makes. Another is skinny, with arms and legs too long for the rest of him. Perhaps two of the group are in between, neither noticeably ungainly nor yet mature looking. One "hasn't started to grow yet" and looks quite like a twelve-year-old in every respect.

What happens when the fourteen-year-olds "break ranks"? The more mature boys and girls just naturally get together as if drawn by the magnet of sex attraction. Some roughhousing, some squealing, and an abundance of slang and wisecracks will come from their corner as they stand around. Just on the edge of this group, the other girls will hover, interested and wistful perhaps but not yet "old enough" to be accepted or to know how. The other boys will turn their backs on the group of laughing boys and girls in disgust that any member of their sex could so degrade himself as to be seen with girls.

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[1] Stolz, Herbert R., Mary Cover Jones, and Judith Chaffey, The Junior High School Age, *University High School Journal*, 15 (No. 2): 63, 1937.

All of these children are the same chronological age. The difference in their looks and in their behavior is largely due to the stage of their adolescent development. The two go along together. We cannot say until the results of further studies are available just which stage of one corresponds to which stage of the other, but it is obvious that there is a relationship between sexual maturation and sexual attraction.

Twelve- and Fourteen-year-olds Together

Now suppose you give the twelve and the fourteen-year-olds a chance to mingle freely together; what will happen? They will gather in little groups on the basis of adolescent development rather than chronological age. The most mature girls may consider themselves too advanced for the fourteen-year-old boys and may talk among themselves about the latest hair-do, the brightest shade of nail polish, or the attractions of older male heroes. Only the handsome youth merits their attention, and even he isn't quite grown-up enough to keep up with them. The in-between boys laugh and talk loudly together, obviously showing off in front of the girls, who in turn go through the same antics trying to attract their attention. A boy from this group roughhouses with a girl he likes, and she returns this attention in kind. The youngest looking fourteen-year-old boy joins the twelve-year-old boys as they jeer at the others or interest themselves in a new gadget. The twelve-year-old girls probably hover around the edges, rather at loose ends.

This hypothetical comparison of twelve- and fourteen-year-old children illustrates the striking differences in physical development and behavior at these ages. At adolescence, it is more difficult than ever to find the general trends that we think of as age level characteristics. But though the general picture for any age looks like chaos at first glance, closer inspection reveals that the growth of each individual follows an orderly pattern.

PHYSICAL GROWTH

Instead of reviewing the physiological changes that take place during adolescence, let us look at the children themselves and then turn to the literature for an explanation of the things that we notice. In our everyday contacts with children, we cannot give them physical examinations or ask them embarrassing questions. We have to learn to evaluate the things we can see and hear and, from these observable data, infer the changes taking place within each child.

Height

What, then, are some of the things we notice about children in their early teens? Increase in height is one of the first. After years of steady growth, a youngster will suddenly shoot up (or so it seems). Almost overnight, skirts and pants will be too short. The familiar lament of mothers is to the effect that "She outgrows her clothes as fast as I get them fixed for her" or "That's the second suit he's had this winter, and now look at how short the pants are." It is true; they do grow fast. Some children add as much as 7 inches to their height in one year. This is largely accounted for by bone growth, particularly that of the long bones.

The femur, the bone in the upper leg, has been known to grow 2 inches in a year.

It is useless for us to try to place this time of greatest growth ("accelerating phase," it is technically called) at any particular age or ages. Averages do not give a true picture of what happens to individuals, and authorities allow themselves a leeway of several years when stating the probable age for this phenomenon. It isn't very helpful to know that in girls it *may* come from nine or ten to thirteen and in boys from twelve to sixteen,[1] but that is about as definite as we can be at this stage of our knowledge. The really important points are that girls "begin to grow" earlier than boys and that this relatively large increase in height is one of the first noticeable signs of approaching adolescence.

For each child, this growth is quite in line with the growth that he has made earlier. He may add more inches to his stature than he did in the preceding years, but he still maintains his relative position with respect to height. Short children grow enough to become short adults; tall children become tall adults. Apparently heredity, as influenced by nutrition and other environmental factors, operates from the very beginning to determine the individual's ultimate height.

The younger a child is when he begins to shoot up the more he grows each year. Recent studies seem to indicate that this period of growth lasts only two or three years whether it begins early or late and that the children who begin early have to cover more ground (or air in this case, since they are shooting up) in the same length of time.

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[1] Brooks, Fowler D., *The Psychology of Adolescence*, p. 19, Houghton Mifflin Company, 1929.

Children grow a certain amount each year anyway, so the older they are before the growth spurt begins the closer they are to their adult stature.

Growth of the Face

About the same time that these children are growing taller, their faces look quite out of proportion for awhile. That is because the facial bones are growing too. Notice the prominence of nose and jaw and the elongated appearance of the face. Perhaps you remember your own concern over some feature of your face which seemed to be much too conspicuous. If you don't, ask your parents about it, or compare photographs taken at that time (we can't say a definite age) with the way you look now. Most grownups are not so interested in these facial changes as they are in increased height, but many children are greatly worried about their looks. They don't realize that this is a temporary state.

It is comforting for both the youngsters and their parents to know that this stage lasts only a short while and that soon faces will take on characteristic proportions and an adult oval shape.

Weight

Close on the heels of the bone growth noticeable in increased height and changed facial proportions come increases in weight and changed body proportions. We do not know the serial order in which these changes take place. We sometimes notice them all at the same time. The important point is that we should notice them and try to interpret their significance.

Some children put on as many as 25 pounds in the same year that they grow most in height. Others wait a year or so before the two catch up with each other. This increase in weight is not just a deposit of fat, as is usually the case with adults, but a real increase in muscles, bone, and other body tissues. The added weight is as much a matter of growth as height is. Other parts of the body develop and fill out the skeletal framework. The gap between growth in height and weight accounts for the lean, lanky appearance of most children in early adolescence. It is a part of the uneven development with which you are already familiar.

Changes in Body Contour

The changes in the body contours of boys and girls at adolescence are so well-known that we need only mention them here.

Boys grow broad-shouldered, deep-chested. Girls develop breasts and broad hips. No longer are they flat-chested little children, almost sexless, but girls and boys—two very different sexes.

Like the other aspects of physical development, these changes in body contour come about so slowly that they are often quite well advanced before we notice them. Not only that, but they are the climax, rather than the forerunner, of the adolescent pattern of growth. Long before even the most alert observer could detect the sex differences we are speaking of, obscure changes take place within the organism, probably controlled by secretions from the pituitary and other endocrine glands. In other words, what we do see—if and when we *do* notice it—indicates that this period of growth is well on its way, not just beginning, as we might imagine.

Poor Posture and Awkwardness

Much has been written about the poor posture and awkwardness of the adolescent, and many different theories have been advanced to account for it. One holds that the unevenness of physical development makes it difficult for a youngster to control his body; another, that unaccustomed to his new height, size, and shape he is embarrassed and self-conscious. A third maintains that early nutrition and social training determine adolescent behavior and body control in no small degree. For the present, there is no way of knowing which is correct. Probably all contribute to the stooped posture and general clumsiness that we notice in growing children.

Look at a group of children with this in mind. Compare the size of hands and feet with the rest of the body. Notice how some of the youngsters try to hide these unruly members. Study the instances of poor posture that you see. How much is it due to the youngster's embarrassment over unusual height or prominent hips or breasts? Are there other evidences of a shy, retiring personality or of faulty nutrition?

Note the remarks that adults make about children who are growing fast. "*Look* at the size of your feet!" says great Aunt Susie when she views her half-grown nephew after an absence of a year. "*I* better take that away; you'll probably knock it over" is the way a mother lays the foundation for a feeling of inadequacy on the part of her adolescent daughter. Be alert during your observations to the things that help or hinder a youngster in overcoming his clumsiness and embarrassment.

The changes that take place at adolescence in height, weight, and general body contour are probably regulated by the intricate and little understood mechanisms of the endocrine glands. They come about quite naturally and with little or no disturbance for most children. Where disturbances do occur, it is well to secure the help of doctors and psychologists to locate the causes of difficulty and to plan treatment for them. Disease processes and personality difficulties of long standing may complicate what might otherwise be a simple process of growth.

Appetite

Another familiar feature of adolescence is the ravenous appetite of these youngsters. Any mother will testify to the difficulties encountered in keeping these children filled up. After what seems to adults like a very satisfying meal, they will call for bread and jam and more milk. And they probably need it. Their stomachs are growing larger, and there is more space to fill than there was earlier. This space has to be filled more often, too, because vigorous activities and fast growing bodies use up energy very quickly. It seems like a full-time job to keep adolescent children in a state of at least semisatisfaction of their appetites. At the first pang of hunger, they raid the icebox, the cookie tin, or the candy store with lamentable lack of discrimination in an effort to fill the aching void and to get more energy quickly.

Growing children can't help being hungry more often than younger children or adults. Eat they must; the only question is what? And that is a big question. Their finicky appetites and digestive disturbances complicate the problem of providing proper nutrition for them. Fourteen-year-old John consumed, in one day, a loaf of bread, two dishes of cereal, one egg, five hamburgers, a quart and a half of milk, a mound of spinach, quarter of a pound of butter, half a jar of jam, a dish of celery, and a large hunk of watermelon. At least that is what his mother saw him eat. She suspected that he added a chocolate bar of his own choosing. Thirteen-year-old Judy's daily assortment consisted of orange juice, a quart of milk (under protest), six pickles, three hamburgers, one egg, some celery, a baked potato, a pound of chocolate peppermints, two pieces of marshmallow nut cake, and a drugstore concoction of ice cream with fudge sauce. For the moment, she is "off vegetables" and "can't stand" milk. Next week, she'll be giving up candy and ice cream on account of her complexion, but neither resolution will last very long.

An adolescent's selection of food is sometimes indicative of a desire to assert himself, to demonstrate that he is old enough to do as he pleases. He may indulge in anything that is forbidden fruit, not because he enjoys the food itself necessarily but because he wants to assert his independence. Talk with some adolescents about the attitude of their parents toward sweets. Are there indications that their choice of foods is influenced adversely by the rules laid down at home?

Whether the causes be physical or psychological, the ravenous and finicky appetites of these fast growing youngsters make large demands on the family larder and parental patience.

Balance of Rest and Activity

Twelve-, thirteen-, and fourteen-year-olds, like all living organisms, will balance their periods of activity with periods of rest if not overstimulated. In a slow moving environment, they will rest informally when they are tired, and no special attention need be given to the problem.

But in a hectic, fast moving milieu, they are likely to keep going beyond the normal fatigue point. Some junior high school children have every minute of every day scheduled with school classes, clubs, committee meetings, sports, dancing lessons, piano practice, scout meetings, and innumerable other activities. There isn't a letup all day long, week in and week out—no time to vegetate, to rest or enjoy leisure.

Watch a group of these youngsters, and see what they do with any unscheduled time. Some will read, some fuss with the radio; some will just sit. To many grownups, they seem to be wasting time. When we think of the household chores, the practicing, and the homework waiting to be done, we are sure that these youngsters could spend their time more profitably than by just sitting around. This temporary state of inertia is probably a form of rest, in which the growing body restores its vigor after activity. It may, in reality, be time wisely spent rather than wasted.

Perhaps the reason we do not recognize it as such is that these children do not rest in conventional ways. They sprawl, instead of stretching out flat; they choose the floor instead of the bed; they hang their feet over the back instead of the front of a chair. In school they lean over their desks, look off into space, remain motionless for a few minutes. The time, the place, and the form of these informal rest periods are not always the most acceptable, but the value is clear if we give the matter a moment's thought.

Fatigue is not so easy to recognize as hunger; and even when we do accept it for what it is, we don't like to admit it to others. Few adults consciously plan to rest during the day, and the children follow our example and try to keep going as long as they can. Can you picture fourteen-year-old Jim coming in the house with an explosive “Gee, mom, I’m tired; can I rest now?” as he would if he were hungry? No, he doesn’t even know he is tired, and rest in a darkened room just isn’t in the picture. He throws his things and himself down in the first likely spot and stays there, asking nothing but to be let alone. He may turn on the radio or reach for a magazine if either is handy, and he would probably eat something if it were brought to him. But in all probability, he would turn a deaf ear to requests to “Sit around the right way in that chair” or “Will you go to the store for me?” or “How about your homework?” There he would stay, if left to himself, until his energy is restored and his body is ready to be active once more. Then he will emerge as bright and peppy and cooperative as ever.

Call it what you like—rest or wasting time—modern adolescents need an hour or so unscheduled each day to use as they will and more over week ends. Youngsters who are perpetually tired, who are not restored to vigor after a full night’s sleep, should be examined by a physician; and at the same time, their schedule of activities should be carefully checked for the overloading which sometimes creeps in in spite of the best laid plans of home and school.

Voice Changes

There is a period when boys’ voices are most uncertain quantities and cause their owners no end of embarrassment. Girls’ voices change, too, but the change is not so great or so dramatic as in the case of the boys. Surprisingly enough, there is little scientific information about the phases of growth that accompany these voice changes or the stages by which the changes themselves are accomplished from the high-pitched voices of children to the adult voices of men and women. Our information comes largely from personal observation and popular literature, and much of it is humorous rather than helpful. However, the phenomenon must be reckoned with as one of the perplexing new developments within themselves to which youngsters must adjust at adolescence.

Pimples and Perspiration

Both boys and girls experience other distressing physical changes which are readily noticeable to observers. Among these, pimples and perspiration rank high in nuisance value. Fortunately both can be regarded as temporary conditions which will clear up as the adolescent grows older. But they loom large in importance when boys and girls begin to be interested in each other.

These youngsters are overly concerned over "B.O." and buy every new deodorant on the market. Face creams and lotions advertised as good for facial blemishes do a rushing business with adolescents.

The pimples and perspiration of this age are tragedies to their owners, and it is small comfort to the children to know that they will be free of both in a few years. Now is the important time; next year seems a lifetime away.

Sex Organs

Some changes not ordinarily noticeable to observers are nonetheless important and may be inferred from what we can see. When a girl has unmistakable hips and breasts, we can be sure that she has experienced her first menstruation. When a boy has begun to shave, it is certain that his sex organs have grown in size and that he is experiencing new sensations from them. Both boys and girls may feel restless from the tension in these regions of their bodies. Masturbation is quite common at this age, an accompaniment of strange new sensations which the children do not understand or know how to deal with. This is the time of all times for helpful guidance with respect to sex. The children need not only facts about sex but understanding counsel to answer their questions as they arise, and someone to help them interpret the place of sex in marriage and family life.

Daily Schedules

What changes are desirable in the daily schedules of the youngsters during these years when they are twelve, thirteen, and fourteen? These children eat not only more but more often; they need some exercise, some leisure time, and long hours of sleep at night. It is not easy to work these into a daily schedule that is already feeling the pressure of homework and all sorts of extracurricular activities. Study the weekly schedules of some youngsters, and see to what extent they meet the children's needs. Compare these schedules with those of children the same age in institutions and in underprivileged homes. How is the problem of between-meal snacks handled? What part does the candy store play? How is rest encouraged? What bedtime hours are maintained? What rising hours? What determines them? How do the children get their exercise? At what time of day are they outdoors? How do they use their leisure time? How much unscheduled time do the children have each week? How do they use it? Do the schedules of home and school seem to fit? What channels of communication between these two important institutions are in use? Notes? Report cards? Parents' meetings? Conferences between parents and teachers? From an investigation of this kind, it becomes clear that working out a schedule for a fast growing youngster is a cooperative venture between home and school.

INTELLECTUAL INTERESTS

The intellectual interests of twelve-, thirteen- and fourteen-year-olds are as wide as the world, as deep as life itself, and include about everything. A glance at the courses offered in a junior high school will show this clearly; sewing, cooking, woodwork, automobile mechanics, typewriting, algebra, Latin, science, and the rest of the so-called "cultural subjects," all have a place in the modern school. In one class, you will hear the youngsters discussing Shakespeare; in another, cakemaking; and in a third, the hows and whys of the unemployed. Like their younger brothers and sisters, they are keen to learn, and our responsibility for keeping alive their interest and for making their learning worth while to them is even greater than it was when they were younger. Like grownups, they are most interested in the things that touch their lives, things that they can use in their daily living. Only the brighter ones find joy in intellectual abstractions such as Latin, higher mathematics, and the other traditional school subjects. The great mass of people feel more at home with the concrete and the practical. And the concrete and the practical can help them to be better citizens, which, after all, is the aim of modern education.

Junior high schools have developed their social science curricula with this in mind. They arouse interest in current events, in community health programs, in vocational opportunities, for instance, and teach these subjects not as isolated fields of knowledge but as vital parts of everyday life.

As long as schools limited their courses to abstract subjects, children lost interest and dropped out of school as soon as the law allowed. A goodly number didn't even wait for that but played truant when the work became hard and uninteresting. Outside school there is nothing worth while for these youngsters to do today, and many of them eventually come into conflict with the law, getting a good start toward a criminal career. By offering a wide variety of subjects, of interest to all types and grades of intelligence, it is hoped that the junior high school can keep these twelve-, thirteen-, and fourteen-year-olds profitably occupied and eventually turn them out equipped to be worthwhile citizens.

Look over the list of courses offered in the school you are familiar with, and study the ones that are sometimes regarded as "frills and fads." Observe in these classes, if you can, and see how the students respond to this work. Make a collection of newspaper comments or remarks of community citizens with reference to spending the taxpayer's money for instruction of this kind. Talk with the school principal or superintendent, and find out why he feels that the courses offered in his schools are valuable. Ask some parents whose children are enjoying them what they think about them. In other words, be as informed as you can about the junior high school curriculum in your community, and judge for yourself how well it is meeting the purpose for which it came into being.

It would be inaccurate to leave the impression that all adolescents are intellectually interested in learning more about something. There comes a time in the lives of each

Domestic science courses teach the fundamentals of meal planning and preparation. (*Courtesy of the New York City Board of Education. Photograph by Frederick J. Weber.*)

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of them when interest in social contacts with their fellow beings swamps the intellectual interests of even the most earnest student. This is a healthy and temporary stage of development which will be discussed later in this chapter. The point for us here is that except for this period of heightened social interest, twelve-, thirteen-, and fourteen-year-olds are capable of pursuing their intellectual interests in a variety of fields and on a fairly mature level.

INTELLECTUAL ABILITIES

There are wide individual differences in the intellectual abilities as well as in the interests of these youngsters. Not all children the same age are equally capable. Many of them cannot complete a modified junior high school curriculum with credit. Some of the "slowest pupils" (and by that we mean children with I.Q.'s of 70 and below) will drop out before they reach seventh grade. Marriage and institutions for the feeble-minded or for delinquents will claim a few. Others will just keep repeating the elementary grades until they reach the legal age for working papers or trade school. Those with I.Q.'s a little higher will spend a few years in junior high school with a special curriculum adapted to their limited ability. The vast majority of pupils (approximately 60 per cent, whose I.Q.'s range from 90 to 110) will finish three years of work with more or less credit depending on their interest, the home influences, and their habits of work. The intellectually superior children (I.Q.'s 120 and above) will be steered toward college and, other things being equal, which of course they never are, should cover themselves with glory in their junior high school years. All this we can predict from experience with large numbers of school children whose intelligence test results and school records have been studied intensively.

There are two ways of expressing the concept of intellectual ability graphically: by M.A.; and by I.Q.[1] M.A., like height, increases each year and describes the individual's mental stature at the time it is measured. I.Q., for which there is no easy parallel in physical growth, denotes the rate at which he is developing intellectually.

Intelligence of Twelve- and Fourteen-year-olds

Let us study the intelligence of the same twenty boys and girls whom we compared for physical development and behavior. Five boys and five girls near their twelfth and a similar assortment near their fifteenth birthdays make up the group. We shall use the results of Binet tests given by the school psychologists because it is impossible for us to get this information for ourselves by just observing the children. What, then, are the facts about the intellectual growth of children in their early teens as indicated by M.A. and I.Q.?

There is a wide range in the mental ages of these children. In the twelve-year-group, the lowest is 9-7,[2] and the highest 16-6, a difference of seven years. A six-year difference exists in the fourteen-year group where the range is from 12-6 to 18-6. These mental differences between children of the same chronological age are as important as the physical differences, even though they are not so noticeable to ordinary observers. Children may be spared the comments of chance acquaintances and visiting relatives on their mental stature, but most of them know just the same where they stand with reference to their comrades.

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[1] The topic of intelligence and its measurement is discussed in greater detail in Chap. 6.

[2] For explanation of this expression, see p. 186.

The children who are most advanced physically are not necessarily the ones who are most advanced mentally. Some who have grown but little physically have already attained great intellectual heights. Jane, the most mature, and Judith, the least mature, of the twelve-year-old girls both have the same mental age of 11-11. And John, who is two years older and in an in-between stage of adolescent growth, has approximately the same M.A. as the two girls. George, the least developed of the twelve-year-old boys, has the highest mental age of the entire group of twenty children; and mature-looking fourteen-year-old Janet, almost the lowest. There is apparently no parallel between physical and mental growth. The spurts and unevennesses of the former are not accompanied by similar irregularities in the latter. As far as we know, there are no sex differences in mental ability between boys and girls at adolescence. Neither sex is intellectually superior to or different from the other. The average mental age for our twelve-year-old boys is 12-9; and for the girls, 12-7. For the fourteen-year-old group, the averages are 14-3 and 14-6, respectively. The differences of two or three months between the sexes is too small to be significant. Any group of boys and girls selected at random would show the same thing.

Differences in the "psychology" of boys and girls at this age are largely due to training and to social environment. The facts at our disposal today seem to indicate that both boys and girls are equally capable in all lines of intellectual work.

Have any of these twelve- and fourteen-year-old youngsters reached the limit in their mental growth as some of them have in their physical growth? That is a question no one can answer, because we do not know what constitutes adulthood in intellectual growth any more than we know what constitutes it in physical growth. Available intelligence tests do not measure the intelligence of teen-age children and adults so well as they do that of younger children. Until better measuring instruments are devised, we cannot say what constitutes adult mental growth or at what point children stop growing mentally. For example, George's mental age of 18-6 seems higher than that of the average "man in the street," but we cannot tell for sure, because we have no good measure of the mental age of adults. Furthermore, even 18-6 may not be the top limit of George's mental growth. His I.Q. of 132 indicates that he is endowed with exceptional ability, and it would be expected that he could grow to a greater intellectual height than the average. About all we can say today is that we do not know when children reach their mental maturity any more than we know when they attain their physical maturity.

Summary: Intellectual Abilities

Mental age increases steadily during childhood, more or less subject to the influences of environment and personality. As far as we know, a child maintains his relative position in his group with respect to mental ability. There is a wide range for both boys and girls from the lowest to the highest mental age and I.Q., but no difference in quantity or quality of the mental ability of the two sexes has ever been satisfactorily demonstrated. The junior high school tries to provide a curriculum to stimulate the intellectual interests and abilities of these children at a time when their physical growth and social development are competing for their attention.

SOCIAL DEVELOPMENT

Adolescence is a time of change in social relationships as well as in other phases of development. A child must learn to find his place in his group as a grownup and not as a child. He must perfect techniques of mature social relations and must substitute them for the physical contacts that were so large a part of childish social behavior. He must develop a set of standards of conduct that are his own. He must establish himself in the eyes of the opposite sex. It takes several years for a youngster to work out these things to the satisfaction of all concerned. Meanwhile, inconsistencies in behavior are the order of the day and the despair of anxious parents.

The stages of social development during adolescence are not well understood and cannot be assigned accurately to definite chronological ages. We shall discuss here the general adjustment of the individual to a group of boys and girls his own age and the preliminary stages of adjustment to the opposite sex. The following chapter deals with relationships within the family and a more mature adjustment to the opposite sex. To a certain extent, this division corresponds roughly to the ages included in each chapter.

Adjustment to Own Age Group

One would think that because these youngsters have been growing up together, adjustment to one's own age group would come much earlier than adolescence and that by twelve years of age, little further adjustment would be required. But we must remember that it is a new self that has to work out its relationships with a group of other new selves. John was sure of his place when he was eleven, but now that he has grown so tall and his former friends are at such different stages of development, he doesn't know quite where he stands. The same is true of Doris, who is most sophisticated for her age. She has left all of the boys and most of the girls behind her and is trying to make a place for herself in an older group. New physical proportions, a perplexing sex consciousness, and an increased independence which one has not yet learned to use—all contribute to the uncertainty that an adolescent feels even in the presence of other children whom he formerly knew intimately.

It is natural that clubs, teams, gangs, and other forms of social relationships should flourish during these early adolescent years. They offer opportunities for experimentation in group participation and leadership, a chance to learn what behavior wins the approval of one's fellow men and what the disapproval. Just as the preschool child has to learn to wait his turn, so the adolescent has to learn to subordinate himself to the group, if he would be a welcome member of it. Prima donnas are not popular at any age level; but at twelve, thirteen, and fourteen, the lessons can be more effectively received, since the urge to be a member of a group is much stronger.

Clubs

Make a survey of the clubs and extracurricular activities that are encouraged in the school where you are observing. You will be amazed at the number and the varied activities they include. Everything from art to airplanes, from walking to welfare, offers an excuse for an adolescent organization. Not all of them represent an earnest, permanent interest in this field of knowledge on the part of the members. The real basis for most of them is a desire for the youngsters to try their wings at social relationships apart from the family.

These clubs are a much more advanced type than those we studied at the nine-, ten-, and eleven-year level. Many of them boast constitutions, by-laws, and all the trappings of adult clubs. They usually start out for some high purpose in contrast to the aimless initiating and eating revelry of the younger children. They are no longer confined to one sex, and boy and girl organizations fare better than at an earlier age.

Teams

Teams also begin to assume importance when children are twelve, thirteen, and fourteen years old. Study the school bulletin board where athletic practice is scheduled, and listen to the comments of the children as they come up to see if and where their names are posted. Attend one of the important school games, and observe the children on the side lines as well as in the game. There is something to be said against as well as in favor of team athletics for children this age, and you could make an interesting study of the situation in your school. How many children are on teams? How many left out? If teams are good for some, why not for all? What provisions are made for safeguarding the children's health? To what extent do children this age cooperate in team play? Talk with parents and coaches, and get their opinions on the value of teams for these youngsters.

Gangs

Gangs are another form of adolescent social activity springing from the same fundamental purpose as the more socially acceptable school clubs. They give the children a chance to learn the give and take of social relationships on their own away from the too vigilant eyes of parents. Many studies of gangs have been made that throw light on the place this type of group holds in the lives of these children. It seems clear that group life is a necessary part of growing up and that where schools, Y.M.C.A.'s, scouts, and other organizations do not meet the need in legitimate ways, the youngsters will organize gangs on their own.

Boy-girl Relations

Twelve-, thirteen-, and fourteen-year-old boys and girls are beginning to be interested in each other. They go around together in groups, rather than in pairs, as they will later. It is as if, uncertain of themselves, they feel a safety in numbers. Neighborhood conditions, home influences, and school opportunities affect the grouping, but the characteristic picture of fourteen-year-olds is of a "bunch" laughing, talking, or roughhousing, boys and girls together.

This mingling of the sexes does not happen suddenly. After the antagonism that was evident earlier, the barriers are not easily broken down. John's parents notice that now at fourteen he isn't quite so curt to the girls who call him on the telephone. A year ago, he wouldn't talk to them if he could help it, made his sisters answer, and, if by chance he was caught, played some joke on them or hung up without more ado. A few months ago, he seemed interested to know that So and So had called him and occasionally answered the telephone himself. Now he brazenly calls his lady friends himself and talks on for what seems like hours to the family.

Keep in mind that the girls are more advanced than the boys in their physical development and their sex consciousness. Girls begin to expect certain courtesies; boys don't know how to grant them even if they should think of them. But both sexes are going through the preliminary stages of learning how to treat each other as adults, with only childish techniques and adult examples at their disposal. The result is a fluctuation between roughhouse and gracious manners, with the former usually predominating. A student observer watched a group of youngsters on their way home from school. "Boys and girls were laughing, talking loudly, and throwing snow at each other. One girl was especially playful with a boy somewhat older, pulling off his cap, tugging at his hair. To 'punish' her, he picked her up in his arms, lifted her over a fence, and dropped her in a field of snow. She screamed and pretended she couldn't climb out much to the amusement of the group. As soon as she was free again, she chased after the same boy, attempting to shove snow down his back, and he of course repeated the process." (B. D.) It is probable that the boy in this illustration was older than fourteen, but the principle is the same. First attempts at social contacts between the sexes are crude and childish. Through these contacts, twelve, thirteen-, and fourteen-year-olds forge and mold their rough techniques for social intercourse into a more acceptable type of behavior. At adolescence, they must socialize; else the process of wearing off the rough edges is unfortunately deferred to adulthood or perhaps never achieved.

Two rough edges are particularly noticeable: one, their conspicuous behavior; and the other, the way they talk. Both are indicative of the struggle to establish themselves with others their own age.

An adolescent usually makes himself conspicuous in one way or another. There is the loud, noisy conduct and manner of dress. In girls, lipstick, brilliant nail polish, and absurdly high heels seem to say to the world, "See me; I'm grown up!" The boys use a language of wild neckties, rolled-up pants, and a wide-open cutout on any automobile they can lay their hands on. They are saying the same thing in the same crude way. Boasts about staying up late at night, going to wild places, and doing all sorts of daring things are frequent in the conversation of these youngsters. The basis for all this loud behavior is a desire to impress their comrades and reassure themselves that they really are grown up. It's like whistling to keep your courage up or putting on your best clothes when you have to face a situation that frightens you. These children don't feel grown up; but they do want to appear so.

The way they talk, too, is another indication that they are not yet grown up. Talk is perhaps not the word to use to describe the conversational efforts of children this age. To adults, they seem utterly senseless; puns, big words, and wisecracks liberally interspersed with "oh yeah?"s, and only an occasional understandable sentence mystify grownups.

The early adolescent years mark an in-between stage in the relations of the sexes, between the antagonism of childhood and the open interest of maturity. At ten, boys and girls are openly antagonistic to each other. At fifteen, they frankly enjoy each other's company. For a time in between, the old antagonism is stronger than the new sex attraction.

This conflict of past and future attitudes accounts in no small measure for the strange behavior of boys and girls toward each other at this age.

ATTITUDE TOWARD ADULTS

While these young adolescents are in the midst of this stage of keen social consciousness, everything else in their lives is subordinated to it. Schoolwork, home chores, even family outings will be pushed aside for an opportunity to be with the crowd. The youngsters not only ignore but very definitely shun the adult members of their home and school community.[1] This is a difficult time for parents who feel and are responsible for the conduct of these youngsters. How much freedom can twelve-, thirteen-, and fourteen-year-olds handle safely? That is the problem that perplexes every parent many times a day. The answer is "a little more than last year and probably more than you think is wise." In other words, a child should try his hand at taking more and more responsibility each year as he grows older, and adults should overcome their own natural tendency to withhold opportunity from the inexperienced.

"Stand by, but don't pry" would be a good motto for the parents of young adolescents. The following incident illustrates this point. George at fourteen became increasingly silent at home and uncommunicative about his activities. The family were interested in his doings, as families are, so he was bombarded with questions about what he played, what the score was, who said what, ad infinitum. It was obvious that he resented the questions bitterly, although he was glad enough to talk about these things when *he* felt like it at odd times, unsolicited. Finally, in desperation, he issued an ultimatum, that he would answer questions only between six and eight in the evening. The family got the point and let him alone. (R. H.) It isn't that adolescents want to be secretive; it is just that they wish their feelings of independence and their privacy respected. The attitude of adolescent youngsters toward adults will be discussed more fully in the next chapter.

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[1] Stolz, *op. cit.*, p. 65.

SUMMARY: TWELVE-, THIRTEEN-, AND FOURTEEN-YEAR-OLDS

For the large majority of children, adolescence begins sometime in these years. Bodies change in size and contour and are subject to stresses and strains that we can only surmise. Intellectually many of these children are as mature as the average adult. Socially most of them are crude and uncertain.

The end of the fourteenth year finds them in an in-between stage, not children any longer and not yet grown up. It is a trying time for them as well as for the adults who have to live with them. But it is encouraging to realize that in another year or two these youngsters will, with the proper encouragement and understanding, have found their places as satisfactory members of the family and of the community.

REFERENCES

LIST I

Anderson, John E.: *Happy Childhood,* D. Appleton-Century Company, Inc., 1933.
Chapter XIII. The Quest for Independence—Psychological Weaning. pp. 169–186.

Chapter XVI. Individualizing Training. pp. 222–235.
Chapter XIX. Parents and Homes. pp. 269–289.

Bailey, Edna W., Anita D. Laton, and Elizabeth L. Bishop: *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933.
Chapter VI. Children in Secondary Schools. pp. 133–196.

Bain, Winifred E.: *Parents Look at Modern Education*, D. Appleton-Century Company, Inc., 1935.
Chapter V. The Teacher's Contribution to Your Child's Education. pp. 82–100.
Chapter XI. Discipline in the Modern School. pp. 247–274.

Cole, Luella: *Psychology of Adolescence*, Farrar & Rinehart, Inc., 1936.

Foster, Josephine C.: *Busy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter XIII. Education at Home and at School. pp. 258–277.

Morgan, John J. B.: *Child Psychology*, Farrar & Rinehart, Inc., rev. ed. 1934.
Chapter XI. Thinking and Working. pp. 334–367.

Strang, Ruth: *An Introduction to Child Study*, The Macmillan Company, rev. ed. 1938.
Chapter XXII. Development and Guidance of Adolescents. pp. 583–653.

Stuart, Harold C.: *Healthy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter V. Organs and Tissues (*Continued*). pp. 96–115.
Chapter VII. The Principles of Nutrition. pp. 144–172.
Chapter IX. Feeding Problems. pp. 200–215.

LIST II

Cunningham, Bess V.: *Family Behavior*, W. B. Saunders Company, 1936.
Chapter III. Neighbors. pp. 83–100.
Chapter IV. More Neighbors. pp. 101–125.
Chapter VII. Using Leisure. pp. 210–254.
Chapter VIII. Adjusting to Community Life. pp. 255–291.

Fisher, Dorothy Canfield, and Sidonie Matsner Gruenberg, ed.: *Our Children*, Viking Press, Inc., 1932.
Chapter XXI. High Schools—For What and for Whom? pp. 226–236.
Chapter XXII. Character in Adolescence. pp. 237–244.

Glover, Katherine, and Evelyn Dewey: *Children of the New Day*, D. Appleton-Century Company, Inc., 1934.
The By-products:
  The Handicapped. pp. 257–280.
  Social Rebels. pp. 281–297.

Goodenough, Florence L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.
Chapter XX. Adolescence. pp. 463–478.
Chapter XXI. Educational and Vocational Guidance for the Adolescent. pp. 479–490.

Strain, Frances: *New Patterns in Sex Teaching*, D. Appleton-Century Company, Inc., 1934.
Chapter I. Introduction. pp. 1–4.
Chapter VIII. The Questionless Child. pp. 133–160.

9 . . . Almost Grown Up

FIFTEEN-, SIXTEEN-, AND SEVENTEEN-YEAR-OLDS

THESE children are the saplings of this book's title. Childhood is behind them; adulthood, just a step away. They are capable young people, ready to assume their share of responsibility in a world that insists on treating them as children.

Physically, they are quite grown up, ready to marry and establish homes of their own as their ancestors did. Intellectually, they can grasp ideas and concepts almost as well as adults. Socially, they are a little gauche from lack of experience; but even at that, they can manage their affairs quite nicely when given the chance. Here they are on the threshold of adulthood, as it were, "rearin' to go"; and everyone says to them, "Wait." Adolescent problems are due to this conflict much more than to the characteristics of adolescence itself.

SOURCES OF INFORMATION

The sources of information about fifteen-, sixteen-, and seventeen-year-olds are the same as those discussed in the last chapter. You may want to refresh your minds by glancing over this section in the chapter on the twelve-, thirteen-, and fourteen-year-olds. Both age groups are included in adolescence, and the literature and research cover the teen years.

OBSERVATION

It will not be easy to see a representative group of these young people together. They are not all in one room, as in the primary grades; or even in one school, as in junior high school. They are scattered all over everywhere—in their homes, in jobs, in vocational schools, and of course in high school. A few are in college.

By all means visit the high school; talk with the principal about his plan of organization, the courses offered, and the number of students who prepare for college. But don't stop there; visit a vocational school as well. Make your way into a Y.M.C.A., and study the youngsters there. You may know the boarding schools, either from personal experience as a student or through friends; so as you are studying fifteen-, sixteen-, and seventeen-year-olds, review in your mind the things you used to do there. Don't think of your own background as typical of that of most youngsters this age. It was probably unusual, and you will need to make many observations of children in other situations before you can get a true picture of this age.

COMPARISON OF SEVENTEEN- AND FOURTEEN-YEAR-OLDS

It would be very interesting if you could line up five boys and five girls close to their eighteenth birthdays, the end of the period we are discussing in this chapter, and compare them with the fourteen-year-olds we studied earlier.

What should you notice about these older children? First, their physique and general body build is much more mature, more finished looking than that of the younger children. Bodies have filled out; features have caught up with each other; and in other ways the unevennesses of growth that were apparent in the fourteen-year-olds have been smoothed out. Study the faces of these youngsters in detail. Do their noses and chins seem as prominent as they were earlier? Do their faces look elongated and thin or full and somewhat round, as most adult faces look? Notice their arms and legs. Do they seem long and skinny as formerly?

And as you observe these youngsters, see what indications there are of the awkwardness that was noticeable when they were younger. Do their hands and feet seem to be more a part of them now? Can they move about without knocking over chairs and glasses? Most seventeen-year-olds are past the awkward age. The poise and grace of some girls this age is the envy of many mature women. Boys, too, are able to handle their bodies skillfully as shown in sports and dancing.

Posture

How does the posture of the older children compare with that of the younger ones or of adults? Are the youngsters stoop-shouldered and hollow-chested or more upright and straight than they were at the earlier age? In the last chapter, we pointed out that posture is probably not wholly a matter of physical growth. It is influenced in no small measure by nutritional factors and by psychological considerations. A poorly nourished body naturally slumps; a self-confident person holds himself well. An individual whose personality has been battered tries to shrink within his body as much as possible, so as not to be noticed and inevitably be battered some more. But one who knows he is loved, whose experience has taught him that he is equal to almost anything, sticks out his chest and figuratively speaking says, "I won't wait for life to come to me; I'll go out to meet it." The difference in the outlook of these two youngsters shows in their postures as well as their personalities. Keep this in mind as you study these young people. Try to figure out how far the cases of bad posture that you notice are due to incomplete physical growth, to faulty nutrition, or to personalities afraid to face life.

Height

The gains in height made by most children of fifteen, sixteen, and seventeen are smaller each successive year. Many children reach their full stature somewhere in these three years. Compare the five seventeen-year-old boys with the five girls the same age. Are the boys noticeably taller now? This is usually the case, although there may be exceptions in the group you are observing. Once more, the boys are in their natural position, taller than the girls and for that very reason acceptable as dancing partners Girls may get their full growth at an earlier age than boys, but the final alignment is the adult pattern with which we are familiar—men taller and heavier than women on the average.

Weight

Once a child has made his large gains in height, his body begins to fill out, and weight gains usually result. Girls gain in weight earlier than the boys, just as they grow taller a few years ahead of the boys. At fourteen, fifteen, and sixteen, the girls make their large weight gains; boys are still growing tall. At fifteen, sixteen, and seventeen, girls gain less, and boys more. At the end of this period, at approximately their eighteenth birthdays, boys are still gaining more each year than the girls, but the differences are much less than they were at the beginning of these three years.

The foregoing generalizations are based on averages, which, as we pointed out before, obscure the pictures of the individuals who make up the group. Here is Judith who at sixteen is far too rotund for her own peace of mind. The scales and the charts show her to be 20 pounds overweight for her age and body build. For a while, she struggled with her diet, but her craving for sweets eventually swamped her desire to wear a size sixteen, and now she is just frankly fat. Then there is John, who at seventeen is on the go every minute. He plays basketball, hockey, and all the other sports in season, is editor of the school paper, and is perpetually in demand for dances and parties. He comes from a good home where he gets lots of good food, but still he is skinny.

Look over the ten birthday children you are studying, and pick out the ones who seem unusually thin or fat. Talk with their teachers about them, and watch the children themselves as they select their lunches in the cafeteria or their midafternoon refreshments in the drugstore across the way.

Putting on weight is not just a matter of adolescent growth; it is dependent on a combination of nourishing food in ample amounts; proper balance of secretions from the thyroid, pituitary, adrenal, and other endocrine glands;

adequate rest and sleep; and freedom from strain and worry. Not all large weight gains are healthy ones, either. It would be interesting to talk with a physician about the glandular difficulties that some children experience at adolescence.

PREVENTIVE HEALTH WORK

All adolescents should be examined at regular intervals by physicians who are familiar with the characteristics of this age. This is desirable not only for reasons of general health but to detect the presence of tuberculosis and heart disease in their early stages. These two diseases occur with such frequency among adolescents that special precautions should be taken to prevent them.

Tuberculosis

Tuberculosis can be detected by a physician with the aid of a simple chest X-ray examination. Many high schools and colleges include this feature in their regular physical examinations. Each year, a few incipient cases of tuberculosis are uncovered. The disease does not force itself on the attention of parents or school authorities as appendicitis or even a common cold do. It progresses silently, out of sight; and when the signs begin to be noticed in a continued loss of weight, a cough, or general lassitude, the disease is already well advanced. Early detection is essential if a complete cure is to be effected. With proper medical supervision, these young people can usually be brought back to health and a life of usefulness. If the disease goes undetected, they will probably break down later in life when they are older and should have greater earning capacity. From all points of view, social and economic as well as physical, it is worth while to make every effort to locate the trouble at adolescence.

Heart Difficulties

For a time at adolescence, the heart and arteries are temporarily out of proportion owing to the unevenness of their growth. This condition in itself seldom causes difficulty, but anything that puts unusual strain on the organism introduces a hazard. The hearts of adolescent children should be examined by physicians at frequent intervals in order to rule out the possibility of disease processes. This should always be done before the youngsters are permitted to take up a new form of strenuous activity.

Athletics

Americans are keenly interested in athletics and take joy in watching as well as participating in sports. Fifteen-, sixteen-, and seventeen-year-olds are no exceptions. All forms of sport are popular with them—football, hockey, basketball, tennis, golf, swimming, and many others.

Adolescents who have practically attained their full physical growth make very capable players. To all intents and purposes, they are full-fledged athletes, formidable rivals of older champions. There is joy for them in the physical activity that these games afford, in the chance to stretch their muscles and to pit their strength against a previous performance, a record, or an opposing team. There is danger for them in competitive sports, danger that, for the sake of team or school, they will force themselves unwisely. Careful medical supervision is essential to safeguard them from their own follies which may have lasting effects on their health.

Health Program

An adequate health program should eliminate all unnecessary strain and fatigue from the lives of these youngsters. The germs of both tuberculosis and heart disease find a rundown, ill-nourished body fertile ground for their activities, and the hectic life that some adolescents lead is no safe protection against them.

There is no need to coddle the well child of any age, to make him fearful or unduly occupied with his health. But there is need to teach him to respect it, to take good care of it, and to live within his own limitations. Children should learn this at an early age; but at adolescence even more than before, they need help in putting it into practice in the face of their boundless energy which seems to them inexhaustible.

Summary: Physical Growth and Health

This is not a period of great physical change but rather a time of consolidating the changes already made. Many of the unevennesses noticeable earlier are being smoothed out, so that by their eighteenth birthdays most children have quite grown-up-looking bodies. Two diseases, pulmonary tuberculosis and heart disease, occur far too frequently in adolescent children, and a careful health program should be instituted which will serve as protection against them and help to detect them in their early stages.

EDUCATIONAL PROGRAM

The regular grades for fifteen-, sixteen-, and seventeen-year-olds are the tenth, eleventh, and twelfth, the last years of formal schooling before entering college. They are frequently referred to as "secondary education." High schools give now either three- or four-year courses depending on whether or not the community boasts a junior high school. The purpose for which the junior high school came into existence was to bridge the gap between the relatively simple organization of the grammar school and the bewildering confusion of the large high schools. Six elementary grades—three in junior high school and three in senior high school—make up what is called the "6-3-3 plan." Not all communities have adopted it, however, so there are still many four-year high schools.

High Schools

High schools are in the spotlight today. They are being besieged by more students than ever before and challenged to make their work more vital to these youngsters. As a result, far-reaching changes are taking place in the kind of courses and the type of teaching offered. In a few years, the results of important educational research projects will be available to serve as a basis for the much needed revision of the curriculum. Meanwhile, most high schools have made some minor changes by offering a wider variety of subjects, taught in less standardized ways. Find out all you can about the high school in which you are observing—what proportion of fifteen-, sixteen-, and seventeen-year-olds enter, and what are the standards for graduation.

Many people still think of high schools as being intended for the small group of students who possess the peculiar combination of intelligence plus knowledge plus personality that academic work demands. That was the way they began in this country—as Latin schools, with the single purpose of preparing scholars for the ministry. It takes a long while to outgrow these early influences, but today most communities have come around to a belief that a liberal education is good for all the people and not for just a favored few. In actual practice, however, a high school education is not yet free to all fifteen-, sixteen-, and seventeen-year-olds but only to those who can get passing marks for the rather conventional type of work offered.

So as you observe tenth grade children, remember that you are seeing only the more fortunate ones of this age group. If you are observing twelfth grade, you are seeing an even smaller percentage of it, because many children who start out in high school drop by the wayside in the course of their high school years. Only a small number eventually graduate. A high school graduate is not a typical seventeen-year-old; he is one of the privileged few.

Reasons for Nonattendance

There are manifold reasons why children do not attend high school, some of them obscure; others, interdependent. Lack of ability and interest rank high as possible causes, and these in turn are related to the kinds of courses offered and the way they are taught. The need to earn money to help out at home used to keep many children from going to high school; but now that there are no jobs for them, it is less significant. Some few students are lured away by marriage, unusual opportunities for travel, or special study. The chief reason, however, seems to be that the work holds little interest for the adolescent boy or girl of average or below average intellectual ability.

A high school Math Team seems quite grown up and amazingly capable. (*From "All the Children,"* 38*th Annual Report of the Superintendent of Schools, City of New York.*)

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Differences among High School Children

Let us center our attention first on the children whom you will find in high school and reserve until later the discussion of those who do not attend.

Visit at least one high school class, and notice the individual differences between the youngsters. Not only are these children at different stages in their physical and social growth as the younger children are, but they represent an even greater diversity of intellectual interests and abilities.

The difference between the boy or girl with the lowest ability and the one with the highest is probably as much as ten years, although we cannot tell definitely because we have no good way of measuring the upper limit of intellectual ability for teen-age children. In the so-called tool subjects, like reading, writing, and arithmetic, the differences are even wider. Some high school youngsters can read only as well as a fourth grade child, and others have a speed and comprehension equal to that of a brilliant adult. In mastery of subject matter, the differences are incredibly great. Some children bring to their high school work a lamentable ignorance, and others a wealth of knowledge about science, for instance. A boy whose father stimulates and works with him over his radio sets, his electrical contraptions, or his chemical concoctions has an advantage over the boy who must get most of his education within the four walls of a school building. The same thing is true for both sexes and for all school subjects. The point is that children learn outside as well as in school and that similarity of school training does not assure sameness of educational background. All tenth grade children have completed the first nine grades, more or less, but some know more about everything than others, some more about one thing, some about another, and a few very little about anything.

Differences in Interests

The interests of these children differ as their abilities do. Some like languages; some hate them. Others enjoy using their hands as in shop or sewing; some prefer to use their wits. Music interests some; painting and modeling, others. There is apparently no limit to the things that a group of high school youngsters would like to study. Everything from beauty culture to zylophones would be included at some time or other if the children could have their way.

It will be interesting for you to speculate on how far these differences are due to the hereditary endowment of these children and how much to home or early school influences. Read again Chapter 2, Before Birth, and try to apply the points brought out there to some particular interest, like music or Latin. Compare two children whose interests and abilities differ widely in either subject. Find out if you can whether their families share their interests and what their parents and their teachers have done to encourage or discourage them.

Vocational Guidance

The job of vocational guidance has been immensely complicated lately by changing industrial and economic conditions. No sooner was a youngster prepared for a job than a machine was invented to do the work better, and the youngster was jobless. The problems of the unemployed are too well known to need discussion here. When there are jobs for only a few of the millions ready and able to work, what should vocational guidance be? About all that can be done is to help a youngster find the general field of his interest and develop attitudes, habits of work, and general skills that will be helpful in any job. His mind should not be too set on any one line, but neither should he be completely at sea about whether to tackle street sweeping or selling aluminum. It is the responsibility of the junior and senior high schools to give vocational guidance in such a way that the young people will be better prepared to make their way in our topsy-turvy economic world. This is not a simple task today.

Summary: Secondary Education

The modern high school, then, has a big job on its hands —to offer a variety of courses that are vital to fifteen-, sixteen-, and seventeen-year-olds and to teach these in ways that will be profitable to a wide range of intellectual abilities and will serve as preparation for mythical jobs.

There is no limit to the amount of time you could spend studying secondary schools and the ways they meet the needs of the children. Some topics you will find particularly interesting—coeducation, for instance, or boarding school versus high school. Discuss these with your friends, and see how much their opinions are influenced by the schools that they attended. Observe the children themselves; talk with them; and try to discover for yourself what the apparent advantages and disadvantages are in both types of schools. Consideration of these issues is stimulating and thought provoking as well as timely just now when secondary education is being studied and criticized on every hand.

Talk with some high school students about their courses. Find out what subjects they are taking and how their classes are conducted. Compare their school programs with those your parents and you yourself followed when in school. What similarities and differences are there? How do you explain them?

FIFTEEN-, SIXTEEN-, AND SEVENTEEN-YEAR-OLDS: OUT IN THE WORLD

School attendance for children this age bears a direct relation to the laws permitting children to go to work and do the jobs that are available. It is impossible to generalize, because conditions are different in different states. Find out what the regulations and opportunities are in your state, and see how these affect high school attendance.

Many children drop out of school at the earliest possible moment and make their own way as best they can out in the world. For the most part, these are the ones with limited intellectual ability for whom the usual high school work has no appeal. They have reached the age when independence is dear to them. Small wonder that the circumscribed program of school does not meet their needs.

But what do they do when they leave school? That is the question. Jobs for experienced men and women are few and far between these days. What chance have immature and inexperienced youngsters?

No one can estimate the effect on these young people of feeling not needed and even unwanted out in the world. It is discouraging, to say the least, to face a future of idleness, especially when one is young and full of enthusiasm and energy. At this age, children are idealistic about service—ready to lay down their lives for a cause. It is easy to understand the momentum that the youth movements have gained among the young people today. To feel that they can be of service, that there is work for them to do is all these youngsters ask. If a uniform, a cause, and martial music are thrown in, the thrill is just that much greater. Study the youth organizations and the job opportunities in your community. Conditions change from year to year, and any attempt to discuss them here would be worthless to you in a few years. Children who leave school early usually find their way into unskilled jobs of one kind or another when they do get work. More often than not, the jobs they do get when they get them are only temporary ones; and when they are over, the children hang around aimlessly wondering what to do next. The work history of most of those who leave school as soon as the law allows is made up of a series of short periods of work with long idle spaces in between.

Sex

SEX, in capital letters, looms large in the lives of fifteen-, sixteen-, and seventeen-year-olds. Its meaning is clearer to them than when they were younger, but its control and its direction are still uncertain. Boys and girls now understand the meaning of the sensations that they experience in the way of sex attraction and desire, but they do not yet know what to do about them. In a culture that condemns premarital affairs and frowns on early marriages, each must work out for himself the place that sex is to play in his life.

To do this, he must have facts, contacts with the opposite sex, and understanding guidance. Sex education per se should be practically complete long before he reaches this age. As we pointed out in earlier chapters, it can be begun in babyhood and carried on step by step throughout childhood. Before a child becomes adolescent himself, he should have a sound background of scientific information against which to measure his own physical and psychological changes as well as the misinformation that comes his way.

Boy-girl Relationship

Young people have to establish themselves with the other sex just as they did with their own social group in early adolescence.

Girls go out with any number of different beaux, although they may like one better than the others. Likewise, boys try out all the available girls. In this way, both sexes not only learn what to expect of each other at social gatherings but also gain experience on which to base their standards for the eventual selection of a mate. Some boys and girls have "sweethearts" or beaux older than they are who are out of school. This is the age when, in an attempt to be grown up, sixteen-year-old girls pick twenty-year-old boys for their companions, and boys of seventeen swear devotion to women in their twenties. All this you may not see in the everyday observation of these youngsters, but an evening at the movies or a club dance will furnish many illustrations. By seventeen, if not before, most children have grown out of the crowd stage which was characteristic of the fourteen-year-olds and are going about in couples more or less.

If, in any particular case, boy or girl, the adolescent years go by without the necessary contact with the opposite sex, the stage is not skipped. It is only postponed to a later age. The simpering full-grown woman who makes eyes at every man is an all too familiar example of this retarded development. To let the children go through the stage and get it over quickly is really the best policy in the long run. Don't nag or forbid or worry too much; it will only make matters worse by prolonging or delaying the agony. It won't last more than a year or so anyway; and when the stakes are a relationship with the opposite sex that will last a lifetime, that is not too much to ask.

The manifestations of this stage of boy-girl relationship have long been the target of humorous comments from adults.

When John and Jane were having their violent puppy love affair, they ran their families ragged, primping and preening and mooning and moping continually. "Simply divine," "swell," and "wonderful" were overworked words applied to the simplest act or look of the loved one. To older brothers and younger sisters, it was all quite sickening; to parents, it was secretly funny. Then just as inexplicably as the pair had been attracted to each other, the attachment broke up midst tears and violent protestations. And now John is "going with" Doris, and Jane with George, and their families are going through the same stage all over again.

At fifteen, one girl wrote in her diary, "Now I have a new hero, and what a hero! Tall, blond, tanned, and good-looking—perfectly swell. The big drawback is he doesn't even know who I am—He often goes up to watch track, so I think I'll have to start that, too." A month later she wrote "I think I'm really in love. It must be love, else why would I be content to stand by and cherish each word and look of his while he loves another?"(B. D.)

These affairs can be duplicated in other households. If you are fortunate enough to have one going on under your very eyes, look beneath the humorous and annoying aspects, and find out what it means to these youngsters. Notice how crude their technique of courtship is and how uncertain they are about it. They will write and rewrite their love notes to get them just right; they will hover around the loved one with a solicitude out of all proportion to the requirements of the situation. They will practice before the mirror to get the facial expression or the dance step perfect enough for the "perfect one." And in thousands of other ways they will show their inexperience and their uncertainty. One fifteen-year-old youngster wrote his girl friend of the moment, "I guess neither of us know much about this love stuff," which is the way many of them feel when they first begin to pair off with the opposite sex. It does not take them long to catch on, however, and in no time at all they seem to be quite expert at the game.

It goes without saying that not all children take this stage of sex adjustment equally hard. Some are extremely casual, others only moderately interested, whereas a few are passionate. There are individual differences in this as in everything else. But whatever the intensity with which a child exhibits the first outpourings of his adolescent love impulses, this is a necessary experience for him if he is to understand the sex side of life.

Crushes

Crushes take various forms, from an infatuation for an older schoolmate or teacher to an undying love for a soda clerk or a movie star. The object of attention may be someone of the same or the opposite sex. The manifestations of love may range all the way from distant worshipful watching to so-called homosexual practices. Little scientific information is available about them, but they are often graphically described in popular literature or on the stage.

The chief danger in crushes is that the person who has the crush will develop a taste for a type of infatuation and attachment that will be inimical to a happy married life. There is little harm in the matinee idol type of crush, because most children give up their dreams when something more tangible presents itself. But when two members of the same sex pour out their love on each other, there is a possibility that they are laying the foundation for their love pattern throughout life. Very few individuals do this, and it is perhaps a fancied more than a real danger. We have no way of knowing. In any case, normal contacts with the opposite sex are usually satisfactory as a means of breaking up this type of attachment in its early stages.

Sex Guidance

All this does not mean that these adolescent crushes and love affairs can safely be ignored by adults. That is where wise guidance which we spoke of earlier comes in. As questions arise in the minds of these young people, they should have a chance to talk them over frankly with someone whom they trust. "Should I let John kiss me on the lips? What harm does petting do? What contraceptives are safe? Why shouldn't we go the limit?" These are the things that "almost grown-up" children want to know about and to ponder over as they formulate standards of conduct for themselves. We cannot give them definite answers, but we can help them to weigh relative values in the light of the scientific information available today.

Wise guidance for adolescents does not mean direction or interference but tolerant, understanding counsel, on hand when needed and helpful in unobtrusive ways. Mothers and fathers aren't always the best people for these roles, because their youngsters are trying to be independent of them in all things, not just in sex matters. Older brothers and sisters, teachers, or camp counselors are often in a better position to help, even though they may not be any better equipped than the parents. This is the age when children think that "mother wouldn't understand," although of course she often does.

Even wise guidance will not be able to protect all children from "getting into trouble." There will always be a few whose sex impulses bring them into conflict with society.

A seventeen-year-old boy shoots his pregnant sweetheart in a suicide pact which he failed to complete. Boys and girls are sent to reformatories for repeated sex offenses. Illegitimate babies are left on doorsteps by their frightened mothers. There is ample evidence that the sex problem among adolescents is no respecter of class or economic status. The restrictions that society imposes on these young people at a time when their sex drives are strong and as yet uncontrolled create a problem for which no adequate solution has been found.

Early Marriages

Early marriages are out of the question for young people today if the couple is expected to be self-supporting. It just can't be done with conditions as they are. Mature couples find it hard enough to get along without outside help. Young people have little chance to make a go of it unaided. It is useless to say that they should wait until they can support a family. That time will never come for many of them, because it takes more hard cash to support a family than it did when this country was young, and there is no way to get the money if there are no jobs.

It looks very much as if young couples would have to be subsidized somehow in America if we want them to marry and bring up families in the traditional way. Some of the other countries are already helping them out. A few families in our own country are doing it privately for their young people. It is a problem that all parents must face when their youngsters reach adolescence. What is to be their attitude if the youngsters want to marry? Will they say, "When you marry, you must manage on your own"; or "Married, you are still members of the family. We will share with you as we always have."

Fifteen-, sixteen-, and seventeen-year-olds are still a little young for marriage, but they are not too young to be thinking a great deal about it and planning to raise families of their own. It is wise for us to understand the problems that they face so that we can help them work out a solution that will offer prospects for the future happiness of all.

FIFTEEN-, SIXTEEN-, AND SEVENTEEN-YEAR-OLDS AS PEOPLE

What kind of people are these older adolescents? It is almost as hard to generalize about them as it is about adults. They are individuals with widely different personalities, and no more alike than the rest of us. But there are a few things that make them different from people in their twenties or their forties, and it is worth while to look at these young people and see if we can discover them.

Watch a group on their way to or from high school. Notice their clothes, their conversation, and their behavior in general.

Dress

Probably the first thing that will strike you is that the clothes of high school children look so much alike. Fads and fashions all their own (not dictated from Paris, or even from Fifth Avenue) determine their costumes. Tiny hair ribbon bows appear on hundreds of sixteen-year-old heads. Sweaters and skirts are almost an academic uniform in some localities. Beer jackets and skull caps, profusely decorated with autographs, are favorites today with both boys and girls. These fads travel like wildfire throughout the high school population and have profound effects on the lives of those who cannot keep up with the procession. Young people are intensely clothes-conscious, and they feel it keenly when they cannot dress in the fad of the moment. Study a group of youngsters with this in mind. See if you can single out those whose families will not permit them to wear or cannot afford to provide them with clothes of the prevailing fashion. What effect does it have on them? Do they seem conscious of being different?

Notice, too, whether the clothes seem to be on the sensible side or uncomfortable and perhaps harmful. How prevalent are high heels and girdles? Socks on stockingless legs for the girls? Sweaters or tight coats for the boys? Caps or bare heads? In some localities, there is a very definite trend toward comfortable and suitable clothing for every day; but in others, silk dresses and high heels are in vogue. Girls must have dressy clothes in order to feel grown up, apparently; and they are willing to forego the pleasure of wearing them every day only when they know that they can wear them for parties. A girl whose wardrobe boasts a single costume for both occasions chooses the dressy outfit, at least at a certain age in her development. From time immemorial, high schools have been concerned over the problem of unsuitable clothes. It is one of the phases of growing up that needs understanding tolerance as well as supervision and guidance.

Compare the way the high school youngsters dress with the outfits worn by the youngsters of the same age who are not in school. Do the latter have fads, too? Do they dress more or less sensibly? What are the reasons?

Conversation

What of these young people's conversation as they saunter along together? They may talk of their teachers, the latest movie, the intricacies of their classwork, or anything else that is uppermost in their minds, just as grownups do. Their voices rise as they recite injustices done to them. (They are not half so concerned over Czecho-Slovakia as they are over the hour they have to be in after a dance.) They get very excited and wrought up over this and that. Like the fads in dress, this runs rampant through a high school group, gathering momentum and excitement as it goes. They make an inflammable group, these older adolescents; and as you listen to their conversation, you can often detect the tense, excited voices that give away their volatile emotional states.

Their conversation isn't all on a pitch of excitement. Wisecracks, slang, and all sorts of flip remarks make up the bulk of the conversational efforts of children this age. Serious-minded adults find it very hard to spend an evening with these young people. They just don't speak the same language. Not only are their interests wide apart, but the liberal use of slang and the limited use of descriptive words from any standard dictionary make it difficult for older people even to follow their meaning. The combination is fatal. If someone is talking about something you aren't interested in anyhow, and you can't follow what he says about it, the situation is obviously trying to both parties.

When these children do decide to be impersonal and highbrow in their conversation, they treat themselves and the topics very seriously. They surprise us with their thoughtful and intelligent opinions on important topics. It seems an odd contrast to the silliness that they exhibit so freely. But then, adolescence is a time of contrasts. In between childhood and adulthood, these children are sometimes one, sometimes another. It behooves us to remember that there is another side to their natures than the one they show us in casual contacts on the street.

Conspicuous Behavior

A laughing, fooling group of fifteen-, sixteen-, and seventeen-year-olds is certainly conspicuous wherever it goes, and that the children intend it to be. Theirs is no thoughtless disregard of adults as ten-year-olds show it. It is a more or less conscious attempt to be noticed. Human beings of all ages seek attention, and even adults indulge in behavior that gives them the center of the stage. These children do it more often and less subtly than most grownups, but the principle is the same. They want to be recognized as people, and the first step is to have the world know they are there. So they laugh and squeal loudly and talk boisterously and then look around to see who is paying attention to them. One way to quiet their exuberant spirits is to show an interest in what they have to say or to contribute to the situation.

No longer children, these adolescents are earnest young people, as grown up as most grown ups. (*From "All the Children," Annual Report of the Superintendent of Schools, City of New York.*)

Library

Driving Cars, Smoking, and Drinking

This is the age when children can drive as well as own cars, when they can smoke and drink. Often they do these things in braggadocio fashion, giving an outward impression of being much more "terrible" than they feel inside.

Drop into a drugstore or a beer parlor near a high school or Y.M.C.A. some day, and watch the young people as they sit around with their drinks. How many of them smoke as if they knew how and as if they meant it? What proportion take alcoholic drinks?

Follow this with another visit to the same place on another day. Are the same young people there again? Or is it a new crowd? Often a small crowd is responsible for the bad name given to a particular school or to youth in general. "Isn't it terrible the way the young people smoke and drink these days?" may really mean "Isn't it terrible the way a certain small group smokes and drinks in public in a way that was not possible when we were young?"

Watch the youngsters with their cars outside the high school building. Study their driving, and compare it with that of older people you know.

In some states, fifteen-, sixteen-, and seventeen-year-olds have only restricted privileges for driving cars, but commuting to school or to work is considered legitimate in most localities. With secondhand cars so plentiful and cheap, it is often a considerable saving to commute by car rather than train or bus. And it suits the youngster very much better. For a few dollars, he purchases an old jollopy, paints it a startling color (or combination of colors), loads it with gadgets of all kinds, and toots forth to show the world. Once again, the desire to attract attention manifests itself in conspicuous behavior. Fast driving, squealing tires, noisy exhausts accomplish the same purpose that loud talking, laughter, and fooling did when he was on foot.

Young people like to dash about in cars just as many grownups do. Going nowhere is lots of fun whether you are sixteen or sixty if the car is to your liking and the company congenial. One seventeen-year-old arrived home at two o'clock one morning all excited over the fun she'd been having. The account that she gave her anxious mother was to the effect that "We had a swell time trying to get some food after the movies. First we went to the Falls, six of us in John's little old jollopy bouncing over that bumpy road. Sally said there was a swell diner there, but we couldn't find it and we *had* to have hamburgers. Joe swore there was one in Monroe, so we came back through town and went out there, but it was closed by that time—it was after midnight then. And still we hadn't had anything to eat. So what do you suppose we did? We came back to the diner right across from the movie. Wasn't that a scream?" No use to point out that this was a "stupid" and expensive procedure. The fun was in dashing about, not in being efficient or economical.

Much has been written about the danger of automobiles in the hands of adolescents, and fatal accidents to young people are still front-page news. There is a sense of power in being at the wheel of a car which even adults cannot resist. It would be better to teach and encourage all ages to use this wisely than merely to forbid and deplore driving by adolescents. Modern children are brought up in cars; they will drive some day; and the problem should be handled in a positive rather than a negative way. How can these children be taught skill, caution, and respect for their cars and for the rights of others? That is the real question.

It is useless for us to speculate on whether the young people of today are "worse" than we used to be. The times are different; young people are probably the same. Human nature has a tendency to believe that the old days were best, but history doesn't always bear out this point.

Smoking and drinking and dashing about in cars are symptoms of restlessness, characteristic not so much of adolescence as of the age in which these youngsters live. In a hectic environment where everybody hurries, where even grownups have little peace of soul, the children find themselves at loose ends, with no jobs, no chance for homes of their own, no place in life, as it were. It's enough to make anybody restless. Give them a reason for being or a cause to serve, and their restlessness is replaced by an admirable steadiness.

Summary: Fifteen-, Sixteen-, and Seventeen-year-olds as People

Young people of fifteen, sixteen, and seventeen are a noisy, restless lot. The spell of the crowd is still strong upon them, and their dress and their conversation follow the local pattern to the last detail. They dash about in groups, on foot or in cars, laughing and shouting conspicuously. Some of them smoke and drink. Some of them pair off in couples.

The lack of assurance that was apparent in the behavior of twelve-, thirteen, and fourteen-year-olds has been supplanted by a boisterous assertion that these fifteen-, sixteen-, and seventeen-year-olds are people—important enough now to be noticed and reckoned with.

FIFTEEN-, SIXTEEN-, AND SEVENTEEN-YEAR-OLDS IN THE FAMILY

Youngsters this age are home so little that it is hardly accurate to speak of them as members of the family. For the most part, they sleep at home and spend hours primping in the bathroom. But the family doesn't see much of them. Their real life is with the crowd of their own age.

Psychological Weaning

It is a time for "psychological weaning" when young people are trying to stand on their own feet, to be independent of their families. Financially this is impossible for most of them, but there are other ways in which they may and should emancipate themselves from the influences that molded their early lives. They may still live at home, receive allowances from their parents, and even enjoy being with their families and yet be independent of them in their ideas, beliefs, and actions. And it is these last three that count.

When John can say fearlessly, "Dad, I don't agree with you. This is what *I* believe"; and Judith, "Thank you, mother, but I'd rather do it myself, my way"; when father and mother can respect their children's opinions and actions as they do each other's, then it matters not who provides the money or the food. It is not independence of living that must be achieved but independence of personality, that unique and sacred possession of every person who is really grown up.

Like many another element in child training, it is easier said than done. Parents cannot safely turn their young people out all at once at adolescence as robins push their babies out of the nests to make them fly. They must begin when children are young and let them taste independence of thought and action in small things. Then step by step, each time with a little bit of risk, or so it seems to anxious parents, they can give these growing youngsters more and more freedom to make their own mistakes as their parents once made theirs, until they are finally ready to assume the full responsibilities of adulthood.

Think over your own relations with your parents, and figure out how the "psychological weaning" took place in your family. Talk with your mother about her ideas on the subject, and see what light she can throw on things you didn't understand as an adolescent. Was there a time when she wouldn't let you have the party dress you wanted? How does she feel about that incident now? How do you? How independent of your parents are you now? Do you still defer to them in some respects? If you think it an unwise procedure, what can you do to overcome it?

Very few adults are really independent of their parents. Most of them are still tied to their apron strings in more or less harmless ways. Where true independence is achieved, it seldom comes without a struggle, because adults are reluctant to let these youngsters go. Adolescence is the time when the urge to struggle is strongest, and grownups should do their part to release these fifteen-, sixteen-, and seventeen-year-olds so they can try their wings.

While the struggle is going on, these youngsters are often cruel to their families. They relegate them to the limbo of bygone days, of people who don't understand and who wouldn't count, even if they did. "That may have been all right when you were a girl, but it won't go today" is the way that Doris puts her mother in her place. "Oh, Pop, don't be so old-fashioned," says George to his father in the most patronizing manner. Once again, parents must read between the lines and see that this is the adolescent's way of saying to them, "Leave me alone so I can grow up. I'm big enough and capable enough, and you've given me a fine start. Now, hands off for the last lap." It is hard, infinitely hard, for parents to be brushed aside in this way, but it is necessary if the children are to grow into capable, independent adults. The fact that so many adolescents come safely through the stage of atrocious make-up, undesirable companions, and even deplorable puppy love affairs encourages us to believe that all is not lost when once they depart from the standards we have set for them.

The struggle for independence is hard on the youngsters, too, and the end is not accomplished overnight. In the meantime, the inconsistencies in their feeling and actions bewilder them no less than their more mature advisers. One minute John tells his mother in no uncertain terms to "Leave me alone; I know how to manage it," and the next comes begging for her opinion on some trivial matter, like the match of his shirt and tie. It is difficult to anticipate the mood with which one must deal, whether aggressive independence or childish dependence or some shade in between. Probably in the course of a day, there will be many different moods. Adolescent youngsters are like untried swimmers, afraid to go too long without feeling the familiar earth under their feet. Every so often they have to touch bottom just to reassure themselves that they are all right. The bare touch adds the necessary confidence for venturing farther.

Outbursts of anger, discouragement, or fear occur with considerable frequency and are added evidence of the conflict that fifteen-, sixteen-, and seventeen-year-olds feel in their struggle for independence. Jane bursts into tears at the possibility of a pimple on her chin for the Saturday dance. John flares up in anger when he can't find the monkey wrench for his car. These states do not last long, and soon the children are sunny and gay again. However, it seems clear that there are conflicts going on within them. Fifteen-, sixteen-, and seventeen-year-olds want to be independent and capable, but they feel inadequate in a great many ways. The feeling is familiar to all of us. We, too, should like to burst into tears at times, when confronted by a job or a situation that we think is too big for us. Just as the twelve-, thirteen-, and fourteen-year-olds were uncertain of and unfamiliar with their bodies, so these older children are in the same state with respect to their personalities.

SUMMARY: FIFTEEN-, SIXTEEN-, AND SEVENTEEN-YEAR-OLDS

This survey of the characteristics of fifteen-, sixteen-, and seventeen-year-olds reveals that they are almost grown up in every sense. They really aren't children any more. Both boys and girls attain their full stature and adult body proportions with a full measure of plumpness. Tuberculosis and heart disease threaten their welfare and happiness. Only about half of them are in school; the other half are trying to make their way in an unfriendly world. Sex is important to these youngsters, and they grope about in an effort to put it in its proper place in their lives. In crowds and in couples, they dash about announcing their presence with a blare of trumpets, as it were. There is little place for their families in their crowded lives. Home is where one primps and preens for the next outing. Parents have had their day; their influence is on the wane. These youngsters are struggling for the independence suitable to their years. Adults can only stand by as understanding counselors, ready when needed to help the young people find interests, jobs, and peace of soul.

SUMMARY: ADOLESCENCE

Look back at the twelve-year-old children, just on the brink of adolescence, and then at those who are almost eighteen, at the end of this period. In these six years, approximately, they have changed from children to grown-ups. They have grown materially in every way until they are now at eye level with their advisers, physically, intellectually, and emotionally. This change was accomplished in the natural order of things with relatively minor disturbances of the process of growing from seed to saplings. Everything points to the fact that the major upheavals that *do* occur are of our own making. Unwittingly we have built a civilization that makes it impossible for young people to find their places as nature intended them to. Husky, able, and eager to work, there is no work; sexually capable and ready for homes of their own, there is no way to manage this; capable of directing their own lives, we will not let them go. If adolescence is a turbulent time for young people, it is not in the nature of their growth but because they must resolve their conflicts with our civilization.

REFERENCES

LIST I

ANDERSON, JOHN E.: *Happy Childhood*, D. Appleton-Century Company, Inc., 1933.

Chapter VII. Love and the Quest for Affection. pp. 84–95.
Chapter XIV. The Quest for a Mate—Sex Education. pp. 187–204.
Chapter XV. The Quest for a Vocation. pp. 205–221.
Chapter XIX. Parents and Homes. pp. 269–289.
Chapter XX. The Quest for Happiness. pp. 290–300.

Bailey, Edna W., Anita D. Laton, and Elizabeth L. Bishop: *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933.
Chapter VI. Children in Secondary Schools. pp. 133–196.

Bain, Winifred: *Parents Look at Modern Education*, D. Appleton-Century Company, Inc., 1935.
Chapter XII. Cooperating Educational Agencies. pp. 275–300.
Chapter XIII. The Future of Your Child in the American Schools. pp. 301–318.

Cole, Luella: *Psychology of Adolescence*, Farrar & Rinehart, Inc., 1936.

Morgan, John J. B.: *Child Psychology*, Farrar & Rinehart, Inc., rev. ed. 1934.
Chapter XV. The Integrated Child. pp. 452–493.

Strang, Ruth: *An Introduction to Child Study*, The Macmillan Company, rev. ed. 1938.
Chapter XXII. Development and Guidance of Adolescents. pp. 583–653.

Stuart, Harold C.: *Healthy Childhood*, D. Appleton-Century Company, Inc., 1933.
Chapter XI. Infection and Immunity. pp. 238–256.
Chapter XII. The Prevention and Treatment of Infectious Disease. pp. 257–280.
Chapter XIV. Accidents. pp. 297–316.

Chapter XV. Special Features of Care at Different Ages. pp. 335–343.

LIST II

Cunningham, Bess V.: *Family Behavior*, W. B. Saunders Company, 1936.
Chapter XII. Growing Up. pp. 387–412.
Chapter XIII. Families of Tomorrow. pp. 413–444.

Fisher, Dorothy Canfield, and Sidonie Matsner Gruenberg, ed.: *Our Children*, Viking Press, Inc., 1932.
Chapter XV. The Meaning of Maturity. pp. 155–168.
Chapter XXIII. The Problem of Going to College. pp. 245–254.
Chapter XXV. Vocational Guidance in Practice Today. pp. 268–281.
Chapter XXVI. Children as Members of Society. pp. 282–292.
Chapter XXVII. In Quest of Life Values for the Machine Age. pp. 293–306.
Chapter XXVIII. Religion and the Child's Life. pp. 307–317.
Chapter XXIX. *Quo Vadimus?* pp. 318–326.

Glover, Katherine, and Evelyn Dewey: *Children of the New Day*, D. Appleton-Century Company, Inc., 1934.
The By-products:
  The Handicapped. pp. 257–280.
  Social Rebels. pp. 281–297.
Children of Tomorrow:
  Children of Tomorrow. pp. 301–320.

Goodenough, Florence L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934.
Chapter XX. Adolescence. pp. 463–478.

Chapter XXI. Educational and Vocational Guidance for the Adolescent. pp. 479–490.

Jennings, H. S.: *The Biological Basis of Human Nature*, W. W. Norton & Company, Inc., 1930.
Chapter XI. The Biological Basis of Marriage and the Family. pp. 253–268.
Chapter XII. Race Mixture and Its Consequences. pp. 269–289.
Chapter XIII. Biology and Selves. pp. 290–299.
Chapter XIV. How the Inherited Constitution Becomes Changed. The Origin of Diverse Organic Types. pp. 300–328.
Chapter XV. Environment and the Future of the Race. Inheritance of Acquired Characters. pp. 329–358.

Zachry, Caroline B.: *Personality Adjustments of School Children*, Charles Scribner's Sons, 1929.
Chapter II. The Quiet Over-conscientious Child. pp. 87–120.
Chapter V. The Over-anxious Child—Fears. pp. 213–233.
Chapter VI. The Elements of Personality and Their Development. pp. 234–249.

10 . . . From Seed to Saplings

THE REVIEW

THESE sketches of the growth of children from seed to saplings present a panorama of that span of life that we call "childhood." In them, the material has been oversimplified for purposes of clarity and overemphasized in certain details to give the flavor of each age. The result is a comprehensive view of all ages and an exhaustive study of none. The next step for students of children is to apply the principles, facts, and methods given here to the study of particular groups or individuals and to interpret the results in the light of the continuous growth of human beings.

PRINCIPLE OF GROWTH

Let us briefly review the principle of human growth which has appeared time and again throughout this book, like a theme song. Different authorities state it differently, sometimes as several principles. It doesn't matter how you state the points if only you understand their importance in child development.

The human organism is an integrated whole, which grows through the interaction of internal and external forces from one stage of development to another with orderliness and continuity in its life cycle. The result is a unique individual—a human being, at the same time like and yet different from other human beings.

There are several parts to this principle, and it will be profitable to mention again the application of each one to the growth and development of children.

THE ORGANISM AS AN INTEGRATED WHOLE

It is the fact that the organism responds as a whole that makes us interested in everything about a child—not just in his psychology or in his health or his language but in all phases of his personality. The system of communication within the organism is so intricate that a change in one phase brings about changes in the others. We cannot unwrap the package that is the child and take out one part to study. Both that part and the remainder have totally different aspects from that which they have when they are together. One cannot study appetite apart from peace of mind or intellectual achievement apart from health. A scolding at home affects schoolwork; unhappiness in school influences health. The effects of one small incident in the life of a child are often widespread. To appreciate the significance of behavior at any given moment, we must take into account the whole child, past, present, and future.

INTERACTION OF INTERNAL AND EXTERNAL FORCES

The organism grows from within, by the process that we call "maturation"; and as it develops, it interacts with environmental forces outside itself. The terms "internal" and "external forces" are simply our old friends heredity and environment under different names. Bodies cannot grow properly without food and light and air no matter how fine the original material in the chromosomes. Minds must have stimulation from outside if they, too, are to develop properly. The same is true for all characteristics. Both internal and external forces interact to produce the child at birth, at seven, or at seventeen.

ORDERLINESS AND CONTINUITY

Growth proceeds in orderly fashion from one stage to the next continuously throughout life. The stages are not clearly defined for the organism as a whole—witness the difficulty of finding dividing lines between the ages, which we mentioned frequently in this book. For a few characteristics, like locomotor development or reading ability, the stages are sketchily outlined. In all cases, one stage merges imperceptibly into another, each one a stepping stone for the next one.

INDIVIDUAL DIFFERENCES

Each individual is unique, different from all other individuals. As a human being, his characteristics are like those of his fellow men, but they exist in permutations and combinations that make him different from every one else. His needs are different, too. He cannot be treated like his brothers either, who are different from him and different among themselves. This complicates the job of education immensely.

These are the principles governing the growth and development of children which have been illustrated frequently throughout the book. That they exist, not as abstractions but as vital influences in the lives of all of us who deal with children, is illustrated by the brief review of the growth of our Johnnie Q. Public of childhood.

OUR JOHNNIE

Johnnie is grown up now. We have followed him from the one-celled stage when chromosomes and genes held the key to his future, through the successive ages of childhood until now he is a tall, strong youth on whom his parents look with mingled feelings of pride and disappointment. Seventeen years seemed such a long time in which to bring him up, when as a tiny baby they bent over his cradle and talked of what they would and would not do with him. Now that it is past, these years seem like overnight, and they wish they could start all over again. Along the way there were obstacles, mountains of trouble at the time, which have since shrunk to molehills in the perspective of the years.

There was the time when at four months he sucked his thumb; and reading somewhere that it would ruin his teeth, they resorted to all sorts of devices to stop him, with little success. The negativism he displayed at three brought on another crisis, followed a few years later by a difficult adjustment to school. Then it looked as if he would never learn to read, and there was a great to-do about that. At ten, he was simply impossible—noisy, careless, and perpetually dirty—and his life was in constant danger from diving, bicycle riding along the highways, and chemical concoctions of his own making. Then came the age when, hating all girls, he picked on his little sister outrageously, and life at home was in a constant turmoil with her crying. He wasn't ever really good in his schoolwork, but he always had a way with people; and in his early teens, he almost failed to pass, because of clubs, teams, and other social activities which consumed his time and interest. It was a bitter disappointment when he decided to go to a business school instead of college. Nobody, not even Johnnie himself, is at all sure how it is going to turn out, but maybe it will be for the best. Anyway, it looks as if he were settling down to work in earnest. He's pretty crazy about his girl, Judith, and is thinking a great deal about getting married these days. He's a grand companion, helpful, interesting, and considerate, and he certainly knows how to make people feel at ease. Not only is he popular socially, but he can get things done. There are qualities for success in him if only he can find his place in the world. Anyway, the job of bringing him up is now done and has been for some time. The high points of concern over him in his childhood seem insignificant now. He doesn't suck his thumb; he does know how to read. All the things that his parents worried over have somehow straightened themselves out. Not always as they had hoped they would—sometimes quite differently. But after all, who can say that it would have been better the other way?

OUR CREED

There is so much that we do not know about children, so much that we shall never know. We can only muddle along, humble in our ignorance in the face of the potentialities that lie within these youngsters. We can study them and try to understand them, individually and in groups. We can study ourselves in order to understand human behavior—our own and other peoples'. It matters little whether or not we do the "right thing"; there is no one "right way" to bring up children. It matters greatly whether or not we have faith in them. We must say to them, "We believe in you. In you lies the hope of making the world a better place in which to live. No one can say how to bring out that unknown best in you. All we can do is to provide the tangible things, like food and schooling, and the intangible ones of security and love, in ways that we believe are best for you. When better ways are found, we shall follow them. In this process of bringing you up from seed to saplings, we shall enjoy you even as we study you; we shall not take you or ourselves too seriously; and always, whatever you do, we shall continue to believe in you."

This is the creed for teachers, social workers, nurses, students, and all the rest of us who deal with children. Whether our charges are two or twelve years old, whether privileged or underprivileged, whether sick or well, we can make our contribution best by studying them, managing them with a light touch, and above all having faith in them.

APPENDIX I

REFERENCE BOOKS

LIST I

Total cost, $24. Composed of ten books, each one quite general in scope and useful for more than one phase of development.

ANDERSON, JOHN E.: *Happy Childhood*, D. Appleton-Century Company, Inc., 1933. $2.
A general book on the mental hygiene of childhood.

BAILEY, EDNA W., ANITA D. LATON, and ELIZABETH L. BISHOP: *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933. In four parts: Part I, $0.75; Parts 2, 3, and 4. $0.50 each.
How to make records and use them for interpreting child behavior; wide age range—through adolescence.

BAIN, WINIFRED E.: *Parents Look at Modern Education*, D. Appleton-Century Company, Inc., 1935. $2.50.
Philosophy of modern education—explanation of elementary school procedures. Characteristics of child growth.

COLE, LUELLA: *Psychology of Adolescence*, Farrar & Rinehart, Inc., 1936. $3.

Summary of present-day knowledge about adolescence. Guidance suggestions.

FOSTER, JOSEPHINE C.: *Busy Childhood*, D. Appleton-Century Company, Inc., 1933. $2.
Largely devoted to play activities. Wide age range included.

KENYON, JOSEPHINE H.: *Healthy Babies Are Happy Babies*, Little, Brown & Company, 1934. $1.50.
Children under three—especially useful for physical growth and problems of home care.

LANGDON, GRACE: *Home Guidance for Young Children*, John Day Company, Inc., 1931. $2.75.
Child under five—broad scope of general principles and point of view. Written simply and convincingly.

MORGAN, JOHN J. B.: *Child Psychology*, Farrar & Rinehart, Inc., rev. ed. 1934. $3.
General child psychology—good illustrative material.

STRANG, RUTH: *An Introduction to Child Study*. The Macmillan Company, rev. ed. 1938. $3.
Child development point of view—wide age range.

STUART, HAROLD C.: *Healthy Childhood*, D. Appleton-Century Company, Inc., 1933. $2.
Summary of principles of physical growth and health care.

LIST II

Total cost, $25.80. Composed of ten books, more academic in style and subject matter than those in List I. Some general books, and some dealing with special topics.

ANDRUS, RUTH, and associates: *Curriculum Guides for Teachers of Children from Two to Six Years of Age*, John Day Company, Inc., in association with Reynal & Hitchcock, 1936. $2.50.

Child development point of view. Helpful suggestions for using records.

BAKER, CLARA BELLE, director of the Children's School, and other members of the staff: *Curriculum Records of the Children's School*, Bureau of Publications, National College of Education, 1932. $2.
Detailed treatment of the school influences. Wide age range —kindergarten through sixth grade.

CUNNINGHAM, BESS V.: *Family Behavior*, W. B. Saunders Company, 1936. $2.75.
Guide to the study of family influences and problems.

FISHER, DOROTHY CANFIELD, and SIDONIE MATSNER GRUENBERG, ed.: *Our Children*, Viking Press, Inc., 1932. $2.75.
Symposium of expert opinion on child growth and training.

GLOVER, KATHERINE, and EVELYN DEWEY: *Children of the New Day*, D Appleton-Century Company, Inc., 1934. $2.25..
A general summary of changing social and economic conditions and their effects on children today.

GOODENOUGH, FLORENCE L.: *Developmental Psychology*, D. Appleton-Century Company, Inc., 1934. $3.
An advanced child psychology, general in scope; follows chronological age sequence.

JENNINGS, H. S.: *The Biological Basis of Human Nature*, W. W. Norton & Company, Inc., 1930. $4.
Facts and theories of heredity.

RAND, WINIFRED, MARY E. SWEENY, and E. LEE VINCENT: *Growth and Development of the Young Child*, W. B. Saunders Company, 1934. $2.75.
Child under five. Great deal of factual material—shows integration of all phases of development.

STRAIN, FRANCES: *New Patterns in Sex Teaching*, D. Appleton-Century Company, Inc., 1934. $2.

Deals with special topic in comprehensive way, helpful in understanding children at all age levels.

ZACHRY, CAROLINE B.: *Personality Adjustments of School Children*, Charles Scribner's Sons, 1929. $1.80.

One of the early books in the field—illustration of personality study method.

At the end of each chapter, lists of references from these books and from these books only are given.

APPENDIX II

TECHNIQUES FOR STUDYING CHILDREN

THIS chapter gives some suggestions for studying children scientifically. Read it over several times—before you begin your observations, when you are in the midst of your work, and at intervals while you are studying children. Some of the points are treated in considerable detail which may seem bewildering at first, but the purpose of each step in this process of studying children will become clearer as your study progresses and you see how each detail fits into the final picture.

BECOME CHILD CONSCIOUS

Before you can study children, you must find the children to study, and that is really much easier than you think. If you have a child or children of any age in your home or near by, you can begin right there; but if you don't, just look about you as you go to and from your daily tasks. Every day we pass by good specimens for study, because we are too absorbed in our own thoughts to notice them. Given a reason for paying attention to children, the streets seem suddenly full of them. Try the experiment of making a list (written or otherwise) of all the children you see for a day or two, and you will be amazed at the way the numbers pile up.

A record kept by the author for one day yielded the following: four babies in their carriages outside the grocery store, two preschool youngsters playing together in their yard, some eight- and nine-year-olds tending a lemonade stand of their own making, twenty-five boys of all ages playing ball in a vacant lot glimpsed as the bus flew by, and three adolescent girls sitting over their Coca-Colas in the drugstore. When the number reached fifty, the author gave up counting, so convincing was the evidence that even an everyday environment provides ample material for the study of children.

The following incident from the author's teaching experience shows that once one becomes child-conscious, the children are near at hand in one's daily life. Two students who commuted to college burst into class one day with the light of discovery in their eyes. "Do you know, there are three little boys on the bus with us every morning. We never noticed them before, but I guess they've been there all year. One is about ten, and the other two smaller, probably younger. We had the best time this morning noticing what they said and did. Do all children that age wiggle and jump around as much as they do—and giggle over secrets they pass back and forth?" These students had simply become child-conscious, and the same thing will happen to you with surprisingly little effort on your part.

While you are noticing the children in your environment, play fair. Notice them all. Don't pass lightly over the ones who annoy or do not attract you. Most people consider children either as amusing little things or nuisances, depending on how the children look and how they respond to them. The cute well-mannered youngster who comes to call at your house with her mother arouses your interest because she is so well behaved, whereas the dirty little boy who bumps into you rudely when running to school arouses your anger and does not interest you in the slightest. Some grown-ups like dainty, curly-headed youngsters who "speak when they are spoken to"; others are drawn to "real boys," dirty-faced and "fresh." If you select the children on the basis of your personal bias, you are bound to limit your real understanding of children correspondingly. All kinds of children are worthy of study, and dirty little boys, dainty little girls, and "naughty" youngsters of any age can all teach us a lot about children. So play fair, and include all types in your study. To limit yourself to any one type would not give the true picture of growing childhood that you are trying to piece together.

So look about you; count the children you see; try to guess their ages; notice how they behave and how they are treated by their elders. Then figure out to the best of your ability why they are as they are and what you would do about it if you were responsible for their care. This is quite a large order for a beginner, but it is guaranteed to set you thinking about all the things there are to find out about children.

STUDY ONE CHILD INTENSIVELY: PERSONALITY STUDY

Obviously you can't study all of the children all of the time. You must center your attention on one thing at a time;

and a good way to begin is by studying one child intensively —"making a personality study," it is called.

There is a fourfold purpose in making such an intensive study of one child: first to know and understand this child as an individual distinct from all the other people in the world; second, to appreciate the relationships and influences that made him what he is or will be; third, to see what children are like when they are this age; and, fourth, to learn more about human behavior in general.

There are many different ways to go about making a personality study of a child, and the one most suited to child study students is to begin by making observations of the child in his natural habitat. One could begin by interviewing him in an office, as is sometimes done in guidance clinics; by giving him intelligence tests, as psychologists often do; or by a physical examination, as doctors usually do. It doesn't make much difference where the study begins; it is where it ends that is important.

A personality study can be completed in a month or less, or it can stretch through several years; but in either case, it should cover all phases of development and include information from all available sources. Data about physical condition, intellectual ability, relations with parents and playmates, and countless other details of the child's life should be gathered together from every possible source. Sometimes it is even necessary to write to other towns or foreign countries to get information—about date of birth or school marks, for instance. But no matter how much time you spend on a study, there are bound to be pieces missing from the jigsaw puzzle of the child's personality that you are trying to put together—places where you cannot get the information you need to complete the picture or where the information you do get is not so scientific as you would like to have it. This is inevitable in any personality study. The really important thing is that the picture of the child's personality as finally pieced together should be as complete and as accurate as it is humanly possible to make it in the time allotted to you.

And now to select a child as the object of your personality study. Any age will do, and any walk of life, but it makes it easier if you pick one whom you see often under varying circumstances. Let us imagine that you select seven-year-old John Smith whose home is near yours and who is in the second grade in the local school. Henceforth, in this chapter, we shall call him "your child" and use him in our illustrations as the Johnnie Q. Public of childhood. How, then, do you go about making a personality study of Johnnie? Practically every day you see him dashing in and out of his house, playing with his friends up the street or riding his "bike." You know his father to speak to, since you both start off at the same time in the morning, and occasionally you talk with his mother and the two younger children as you pass them on the street. That is the extent of your contacts with the family. Where and how to start gathering material about Johnnie? That is the question that confronts you.

OBSERVING

A good way to begin is by noticing what the child himself does and says and by writing it down in what is called an "observation record." For child study students, the major source of information about a child's personality should be in observation records. It is therefore important for all students to develop skill in observing and recording a child's activities in many different ways and in all sorts of situations.

You must learn to be a good observer and follow the etiquette that experience has taught us produces the best results. You do not need to wait for an introduction to Johnnie or to any child you want to observe, nor do you have to obtain his permission. You can begin observing at once, provided that you do so unobtrusively and with due consideration for the child.

The etiquette consists in showing a real interest in Johnnie in the way that will be most acceptable to him or to his parents. If he is in school, sleeping, or playing absorbedly, you watch quietly from the side lines and do not intrude. When he looks up and smiles, you perhaps smile, too, or respond to him in other ways. When in doubt about how to respond, wait a few seconds, and the child will probably give a cue. If that cue is not forthcoming, try to think what you would want somebody to do or say if you were the child. It goes without saying that the person who wants something (even if it is only information about a child) should be always pleasant and courteous and not too anxious. If you approach any child in this manner, you are almost sure to be well received and to be rewarded eventually by the information you want.

Whether you should speak to a child you are studying or to his parent or teacher depends on the situation, and you will have to decide each time for yourself, referring back to the general principle underlying the etiquette—that of showing a real interest in a child in the way that is most acceptable to him or to his parents or teacher. Usually the situation is more natural if you keep in the background and do not let the child know that you are interested in him; but occasionally it is permissible to talk with a child. When studying older children, it is often very profitable to develop a friendship with one of them and thereby gain an entree into their secrets and their activities. But there is no general rule. The aim, as we have pointed out before, is to make the child feel at ease so that you can obtain as much worth-while information about him as possible.

So, as Johnnie dashes about, greet him with a friendly "hello," show an interest in his activities, and notice all you can about his looks and his actions. Make opportunities to sit by unobtrusively and take notes on his activities. If he asks what you are doing, the answer "my lessons for school (or college)" will usually be sufficient; but if it isn't, you can think up an equally noncommittal answer which will satisfy his curiosity and yet not give away the fact you are observing him.

Should Johnnie's parents or teachers appear on the scene, don't run away. Take them into your confidence, and encourage them to tell you about Johnnie. Contrary to student opinion, parents and teachers are not unapproachable where their charges are concerned. They like to talk about their children, especially to anyone who shows a real interest in them. And like all of us, they like to talk about themselves, their own interests and problems. The overzealous student who tries to extract information by the question and answer method invariably fails to get as much or as helpful material as the student who takes time to be friendly and interested in Johnnie's parents and teachers as people. There is more to being a good observer than sitting on the side lines and taking notes. One must fit into any situation in which Johnnie is concerned, with due regard for the adults as well as the children in it.

OBSERVATION RECORDS

To make the observations of Johnnie useful to you, you should keep written records of what you see and hear. As a general rule, the most scientific method is to take notes of things at the time they happen. Memories are notoriously unreliable and are usually colored by our own feelings. Writing things down assures you more accurate and scientific information than you would have if you tried to keep it in your head. There is nothing new about keeping records of children. Parents have kept "baby books" for years. Perhaps your mother has one of you, particularly if you happened to be the first baby. Doctors and hospitals, too, keep detailed charts of children under their care. In fact, it is pretty generally recognized today that memories should not be trusted and that important happenings of all kinds should be put in writing.

Obviously, there are times and places when it is not possible to take notes on the spot. When you are teacher, parent, or playmate, you find it very difficult to detach yourself enough from the situation to sit on the side lines and write things down in true observer fashion. When this is so, the next best procedure is to remember the significant things and write them down as soon as possible after they happen. Work out a system for making this easy and simple. Carry a pencil and small pad with you always; devise some helpful abbreviations; and jot down notes whenever you can, however you can. Don't be a stickler for form or for any special type of blank. The really important thing is to train yourself in the habit of putting things down on paper as soon as possible after they happen and in such a way that they will be helpful to you later.

This is the procedure to use for anything you notice about Johnnie in your casual contacts with him. Suppose you see him in a fight with another child or absorbed in reading something. No need to stop on the sidewalk and whip out your notebook. Take in all you can on the spot, and then write it down from memory as soon as you get home.

For students who are studying children seriously, the major part of the observations should be as scientifically recorded as those in the physics and zoology laboratories. Making written observation records of children demands a special technique, just as the other laboratory sciences do. There are two simple rules to follow when writing down anything about children: (1) name and date everything; and (2) record everything exactly as it happens.

Name and Date Everything

The phrase "name and date" as used in this connection means write the name of the child (or children), your name, and the date and time of day. It is a good idea to form this habit early, because records of activities are useful in studying children only when one knows what children performed them and at what stage in their development. Where you are centering your attention on a child, as in the case of observation records for a personality study, it is not a serious error to omit the child's name, because you are taking records on only one child, anyway; but at other times, you need all this information, so it is best to learn to put it down automatically. A little experience in using children's records for personality studies will convince you of the importance of naming and dating everything.

Suppose, for example, that you have several records intended to throw light on Johnnie's physical condition; one reads, "Ran actively about the playground"; another, "Kept his head on his hands throughout most of the period"; and still another, "Looked paler than usual." Unless you know the dates and time of day that these were taken, it is impossible to tell whether Johnnie is getting worse or better. With dates and time of day noted, you can arrange them in sequence and study the fatigue effects of the school day or of the school year on Johnnie. No matter how excellent a record is in itself, without the essential information of name, date, and time of day the usefulness of the observation is limited. So to save yourself time, annoyance, and disappointment, form the habit of naming and dating every record with the same regularity that you used to put your name and the date at the top of all your papers in grammar school. And do it first, *before* you begin to take notes; else you may forget it.

The top of each observation record should look something like this:

September 25, 1937 9:20–10:10 John Smith
Record made by Sarah Jones

Record Everything Exactly as It Happens

The second rule—Record everything exactly as it happens—is basic to all scientific recording in any field of knowledge. It merely means to note all that you can see and hear and touch and smell—the things you get through your senses—and to leave out your personal feelings and moral judgments. Tell what the child did, not what you thought he was feeling or how "good" or how "naughty" you believe him to be. For example, record the number and kind of temper outbursts, in place of saying, "John was in a bad humor." Give details of the way he looked when he hit George with the stick, instead of merely stating that "He did it deliberately." The reasons for this are easy to see. What the child did is a fact; whether it indicates bad humor or deliberateness is an interpretation in which others might or might not agree with you. Someone else might think that John was just being playful, and subsequent events might prove that to be the case. As far as humanly possible, observers should record everything exactly as it happens so that the original data can be interpreted and reinterpreted any number of times as occasion demands.

It is true that there are times when it is practically impossible to describe what the child did in sufficient detail to give a true picture of his behavior. Then it is necessary and desirable to include some interpretation—a justifiable procedure if you are careful to mark it as such. Put parentheses around your interpretations, and indicate by a question mark a doubt in your mind about the possible interpretation. For instance, "John stared at the chart; didn't say a word," "(timid)" or "(timid? or didn't know the words?)." The plan of putting parentheses around your personal interpretations enables your reader to separate what the child actually did and how he looked from what you thought he was feeling. Both are needed at times to give a true picture of the child's behavior. In the last analysis, what you are trying to do is to see a child as he is and to make as accurate a picture of him as is possible in view of the imperfect tool of record making and the inevitable weaknesses of human recording.

In the light of this aim, do not feel called upon to *explain* the child's behavior in your records. That will come later.

In fact, don't let yourself fall into that habit of trying to find reasons for everything the child does as you are recording it. Be content to record, "John stood on the outside of the group," and resist the temptation to add by way of explanation "because he has played very little with other children" or "because his mother doesn't let him play much with other boys."

It will take a little practice for you to develop the habit of following the rule—Record everything exactly as it happens—so try out the following suggestions until you become familiar with the mistakes you are likely to make and know how to guard against them. As you are making your records of Johnnie, ask yourself these questions: "How do I *know* this? What actually happened? What did Johnnie do or say?" The answers to these will bring you back on solid scientific ground once more. Another way to check the accuracy of your recording is to get one or two of your friends to make observation records of Johnnie at the same time that you take a record. Try taking down everything Johnnie says and does for ten minutes or keeping a record of every time during an hour's play that he is in contact with another child and what happens. Then compare the records of all the observers, and see wherein they agree and disagree. Note what points everybody agreed upon. Discuss the points one or more of you failed to get, and see what explanations you can find for this disagreement in your records. Question every statement that is not a statement of fact, that involves interpretation or personal judgment, and suggest ways of recording the same thing in scientific fashion. It would be a good idea to take several practice records at different times and to discuss them with your fellow students until you achieve a high degree of accuracy in your recording. Once you have done this, you are ready to make observation records of Johnnie which will serve as the basis for your personality study of him.

THE DIARY RECORD

There are many different kinds of observation records, but the diary record (or running record) is a good one for you to begin with, because it consists of taking down everything a child does and says. You do not have to make any selection of what to record and what to let go by. You are merely supposed to record everything. This will keep you very busy, because children move so fast and so frequently, they talk so much and so indistinctly, that, in spite of good intentions, some things will be omitted. However, you should aim to put down everything you can in just the order that it happens, and with practice you will find that you can get practically everything.

Before beginning to record, complete the name and date heading by writing the names of all the children and adults who are in the situation. Then devote a line or two to a description of what is going on. For example: "(Sally, Jean, George, James, and Peter) Miss Smith and Miss Jones, school playground, recess time, John playing tag with four boys, one girl." Or, "Miss Jones's classroom, children in regular seats listening to one child give report on helium. John third seat from left in front row." This gives the background against which "your child" moves and talks and acts in the foreground of your interest.

Next put the time in the left-hand margin; then begin to write down everything John does and says. You will have to work fast, eyes alert to what is going on even while your pencil makes notes on the paper. Making a diary record is a three-ring circus, but abbreviations help wonderfully. Using initials for names of children, teachers, and equipment, as well as shorthand of your own devising, will make the task easier. Keep writing—"J. twists rubber band around pencil, turns around in chair, interrupts child giving report with 'But Miss Smith, I thought. . . .'" On and on you write, following J.'s activities until your watch tells you that five minutes is up. Then you make a note of the time in the left-hand column and continue to take more notes. It is a good idea to record the time every five minutes throughout the record. In timing your observation in this way, you add considerable value to your notes. You can later figure out how long John stayed at this or that activity, what time of day it was when he seemed tired, and many other valuable things about John's behavior.

Be sure to take your notes in positive fashion: "J. sat quietly, looking into space," instead of "J. inactive, not doing anything." You will find that practically every time you are tempted to use a negative phrase, it can be easily and profitably replaced by a positive statement of what John is doing.

Be alert to the words that children and adults use. Hear them, as well as record them, exactly as they are said. Don't be content to know that Miss S. "told John to put away his materials." How did she say it? What words did she use? These are important things to note; and in them may lie all the difference between cooperation and noncooperation on the part of the child. A teacher or a child could say, "Hurry, John, put away your blocks; we are all getting tired of waiting for you," or, "Come on, John; put away your blocks." There are many ways of saying the same thing, and it makes a difference whether one "asks nicely" or "orders." In making a record, what is said and the manner of saying it should be noted so that Johnnie's response can be properly understood.

Furthermore, it is not enough to record just what "your child" does and says; you must note enough of what other people say and do to him to enable your reader to interpret his actions. Suppose, for example, that John hit George and your record said just that—"John hit George." What an unsatisfactory picture that would be! Don't you want to know why? What provoked it? How did he do it? And what did George do in return? The record should be amplified in some way similar to the following: "John building tall tower of boxes. George tried to knock it over. John said, 'No, George, I want it bigger so we can climb up and see the train.' George made another pass at the tower, and John repeated his 'No,' looking threateningly at George. George continued, and John raised his right hand and hit him on the shoulder. George turned and ran away." This amplification of the bare statement gives a much more complete picture of John's behavior and enables us to interpret its significance. So in making a diary record, follow the rule: Write enough of what other people say and do to show to what remark or act your child is responding.

At first take short diary records of Johnnie. Somewhere between a half hour and an hour is a good length of time to observe. Such keen attention is demanded to watch even one child, and so much writing to put down what he does and says, that fatigue will set in early and make your observations inaccurate if you continue too long at a sitting. After you have had some practice in making diary records, you may be able to take an hour's record without resting, but that is about the limit. Even experienced recorders find their efficiency very much reduced if a diary record runs over an hour in length. If you need more than an hour of recording for one child, it is better to put together several records taken at different times than to take too long a record at one sitting.

When you have finished each diary record, be it ten minutes or a half hour or an hour, take some time to amplify the notes right on the spot or soon afterward. Fill in the blank spaces, the places where your writing is difficult to read (more difficult than usual, I mean), and explain or add a key for any unusual abbreviations or symbols. If you don't do this at once, you may find to your sorrow that even you yourself can't read your own notes within a week or two when you really need the material. How many times in going over notes with students have I heard one remark, "Now, what do you suppose I meant by that?" And together we have wasted precious minutes figuring (or trying to figure) out the meaning of something that could easily have been supplied at the time the record was made.

The technique for making diary records has been discussed in considerable detail here because it is applicable to all kinds of records. As pointed out earlier in the chapter, skill in observing and recording is essential to child study students, because observation records of one kind or another are the stuff of which personality studies, age-level research, and many other kinds of studies of children are made.

OTHER TYPES OF RECORDS

A diary record is not the only type of record that is useful in making a personality study. So after you have taken several diary (or running) records, you should stop and study them and decide what to do next. Let us assume that the records of Johnnie you have already taken are divided in this way.

			Minutes
Sept. 28	Shop period in school	9:15–9:40	40
Oct. 1	Playing on street	3:45–3:55	10
Oct. 2	Reading period in school	10:20–10:40	20
Oct. 6	Assembly—J. taking part in play	9–9:30	30
Oct. 10	School cafeteria	12–12:25	25
Oct. 10	School playground	12:30–12:55	25

Read each one over carefully to see what information you have about Johnnie and what further information you would like to have about him. Space does not permit us here to consider in detail the different phases of development that should be covered by observation, but you will find helpful outlines and suggestions given in the references.[1]

Undoubtedly you will want to take some special records of things about Johnnie that diary records don't usually cover—for instance, how Johnnie looks (his "bodily equipment," as Bailey, Laton, and Bishop call it); or his manner of expressing himself, the words and sentence structure he uses, the way he tells a story, and other phases of that all-important topic of language development; or perhaps the way he gets along with children, his ability to cooperate, to lead, to follow, or to do both. All these are things that diary records throw light on only incidentally and that you will want to observe further.

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[1] BAILEY, EDNA W., ANITA D. LATON, and ELIZABETH L. BISHOP, *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933.

ZACHRY, CAROLINE B., *Personality Adjustments of School Children*, Charles Scribner's Sons, 1929.

The form for taking these records is not so standardized as that for the diary record, and you have to select what you are going to observe and decide yourself how you are going to record it. For instance, if you need a language record, write down everything the child says in the time that you are observing him. A record of his ability to get along with children is not so simple as this. You may have to take several different records—of the amount of time Johnnie spends alone; with other children; the way in which he offers ideas to other children and accepts theirs, for instance. The simplest way to record any of this material is to jot down a series of notes while you are observing. It is hardly ever worth while for students to spend time devising a blank form in which to record by means of checks in the right column.

Always keep it in mind that it is the child that you are interested in, not the records. Some people make the mistake of accumulating records for the sake of having records and never use them to find out about the child. After all, the aim of all record taking and record keeping is to provide scientific material by means of which you can understand children better.

OTHER SOURCES OF INFORMATION

So after you have taken several records of Johnnie, look about you to see what other sources of information are available to you. The most obvious ones are the school records—report cards, attendance records, physical and psychological test records, and a large variety of other kinds. Do not expect Johnnie's school to have them all.

Probably only a few of the more privileged schools have complete records of all phases of a child's development over a period of years. And even if all these records are in existence, you may be permitted to study only a few of them. School records are confidential, just as doctor's records are, and some schools are loath to trust students with information that might "leak out," to harm the child or the parents in any way. It is up to you to use ingenuity to obtain permission to consult all Johnnie's records; but where permission is not forthcoming, bow to the inevitable, and indicate in your final summary that one of the pieces is missing in the jigsaw puzzle of Johnnie's personality that you are trying to put together.

People are another important source of information about Johnnie. Although not so reliable as records, they nevertheless can offer a great deal that is valuable. Sometimes you pick up bits of information from your friends who are studying other children in Johnnie's grade or from conversations between other people that you overhear, for instance. You can talk with your child's teacher, with his parents, his scout leader, the policeman on the corner, in fact with anyone who knows him. It is your job to seek out these sources of information, to be pleasant and patient (even though you do feel pressed to get the information as soon as possible), and to write down what they tell you as soon as you can after the interview. Remember that you are gathering information, not giving it out. Do not be led into telling things about Johnnie that should be regarded as confidential. Resist even the temptation to tell the things about him that you think are funny. Others might interpret the incidents differently. On the whole, listen attentively, and say as little as possible.

Another word of caution. There will be inaccuracies in the information that you get from people, and you should plan to check the statements wherever possible. We all know how easy it is to lose track of dates, even important ones, and how likely we are to confuse different children if we do not know them well, and sometimes even when we do. Furthermore, it is a natural human tendency to emphasize the good things about the people we like and enlarge on the bad behavior of those toward whom we don't feel kindly. For all these reasons, it is well to be on the alert for discrepancies in the things that people tell you about Johnnie and to check the accuracy of the statements whenever you can.

Perhaps the most perplexing problem that confronts the student making a personality study is when to stop gathering material. There is no logical break in child growth, no "good place to stop" already made for you. Children keep right on growing whether you are studying them or not, and an up-to-the-minute report is out of the question. The material is out of date even before you have written up your notes. So the thing to do is arbitrarily to decide in the light of your college work when you are going to stop. It is best to allow some time before your report is due in which to digest the material you have gathered, because that usually takes much longer than you expect.

And when your records and notes are all together, read them over several times. Some students find it helpful to mark their records with colored pencil, underlining different phases of growth with different colors so that they can be located more easily later—physical condition or muscular growth in red, for instance; green for language; and blue for social contacts. Underlining is better than copying material on separate cards at this stage of your study, because you do not yet know what the significant material is, and copying in itself is wasteful of time and energy. Time enough to copy later on when you are preparing your final summary.

THE PERSONALITY SUMMARY

The last step in preparing your personality study of Johnnie is to organize your material under a few large headings and, finally, to summarize your conclusions. Read the references given at the end of this chapter. Notice the headings that are suggested there, and select the ones that seem most applicable to the problems presented by Johnnie. Make up a tentative outline, and try to fit the material from your observation records and from other sources into it. If it doesn't fit easily, discard that outline, and work out another. Here are a few possible headings: Physical Equipment and Health; School History and Progress; Home Conditions and Family Relations; Play Interests and Playmates. Do not follow these slavishly. Work out your own for the individual child you are studying.

Try to imagine the possible causes and effects of the different phases of Johnnie's personality. What part has health played in his life? How does he feel toward his playmates, and why? These are examples of the questions you should try to answer. Test each assumption by going over those portions of the notes that throw light on the problem. To continue the example further, suppose you say to yourself, "I think Johnnie is afraid of the bigger boys because he is small and doesn't have much physical energy." Is he small for his age? What evidence is there that he has little energy? Don't expect Johnnie to be "average," whatever that may mean. He is advanced in some things, a little behind in others. Look for the things that are like eight-year-old behavior and those that are five- or six-year-old activities. These things you should check with the evidence in your notes. There is nothing stereotyped about the plan of a personality summary. The detail in which you work it out will depend on the length of time you can devote to it. There is no "average length" for a personality study; some could be a few pages; others, over a hundred and more. None of them would be complete, in the strictest sense of the word.

We can never know all that there is to know about any child. In spite of our best efforts, significant details and relationships will elude us, and the picture of Johnnie that we finally put together will not be the last word. We can accept it for the time being, however, as a working basis, and revise it later as our information and understanding change.

It is not the study itself that is important, but what you learn in making it—the skill you develop in observing and recording, the understanding you have of why Johnnie is as he is, and the insight that it gives you into the characteristics of children in general and his age in particular.

AGE LEVEL STUDIES

As we pointed out earlier in this chapter, an intensive study of one child is a good place to begin your study of children. Children in the mass are really only a collection of individuals who have some things in common because they belong to a certain stock, have lived the same number of years, and are growing up in the environment of the nineteen thirties. Even when we study a group of children of the same age to find out what characteristics they have in common, we do not lose sight of the individual personalities of these children. In the last analysis, it is the individual child who is our real interest. We can study age levels only by studying individual children, and our only point in studying age levels is so that we can understand individuals better. Interested as we are in the individualities of children, we are also interested in age level characteristics —the things that children have in common at certain stages of their development.

Keep in mind two things when you are trying to find these developmental landmarks (for that is what age level characteristics are): one, that even children of the same age differ widely in their equipment and abilities and, two, that children of other ages have many characteristics in common with children of the age you are studying. Probably no seven-year-old is a seven-year-old in all phases of his development, and no characteristic first shows itself at the seventh birthday and disappears at the eighth. This makes the task of listing age level characteristics difficult; but from your observations, your records, and your reading, you can make certain tentative generalizations about the different phases of the growth and development of children which will be helpful to you in understanding any child or group of children for whom you are responsible.

Because your Johnnie was seven years old when you made your intensive study of him, the seven-year age level is a good place to begin. The questions you should ask yourself to guide you in this type of study run something like this: In what respects is Johnnie like other seven-year-olds; in what ways, different? What do seven-year-olds do that fives and sixes cannot? What are the interests and abilities of seven-year-olds just because they have lived in the world that span of years? Because the development of children at any age is uneven, it is necessary to know something of the ages on either side of the age of your special interest. Read the chapter in *Children from Seed to Saplings* that includes and those that touch on the age of your child. If Johnnie is seven, read not only Chapter 5, which deals with five, six, and seven-year-olds, but also Chapters 4 and 6, which describe the preschool years and eight-year-olds.

You will need to supplement your records of Johnnie with observations and records of other seven-year-olds. Look about you for other children of the same age—in the same grade, in their homes, at play, on the street, and in as many other environments as you can find them. The more different the backgrounds under which you observe this age the more complete will be your understanding of the age. If you limit your study to seven-year-olds in the same classroom, your picture will itself be limited to seven-year-olds under the guidance of one teacher and will not be a well-rounded picture of seven-year-olds in general. So map out for yourself a variety of places where you plan to take records on different children of approximately the same age. The number of records you take will be determined by the length of time you are supposed to spend on the study of any one age. As in the case of the personality study, don't spend all your time taking records. Allow yourself some time for analyzing the material you have gathered and for writing up a summary of the outstanding points.

A good procedure is to take four or five records, then study them, and go back and take some more. If you take too many records without going over them carefully to get a tentative picture of the age, you become lost in the mass of detail. So after you have taken a few records, take time to study before going back to take more.

Spend some time reading what the authorities have to say about the age you are working on. Read the chapter in this book and one or two of the references while you are going over your notes. The suggestions contained in these sources will help you organize your thinking, as well as your notes, and will give you ideas about what else to look for when you observe further. Then read over carefully each record you have taken. Think as you read each statement, "Is that characteristic of seven-year-olds? Do most children that age do or say that?"

After you have gone over your records and have studied the material contained in them in the light of the ideas given in the reference reading, it would be a good time for you to talk with other students about the characteristics of the age you are studying. It is best for you not to work too much alone—better to talk over your ideas with your fellow students and to compare notes with others who are studying the same age level. Note the points in their records that agree with your ideas and also those which are different. Make a tentative list of statements of things that seem to be true of most seven-year-olds and those about which you have too little evidence to tell.

Let us follow through one example here so that you can see the general procedure. What do your records tell you about the interests of seven-year-olds? Look for the kinds of games Johnnie played—tag, varieties of "it" games, and invariably games with lots of running in them. That was Johnnie; did the other seven-year-olds you observed like the same games? The evidence from your other records answers this question in the affirmative.

In this way, you can piece together a picture of the characteristics that seven-year-olds have in common. Some of the work has already been done for you, notably height and weight standards and intelligence test scales, and you should supplement your own observations by reference to studies that others have made of the age level characteristics.

In summarizing your material, don't try to be too dogmatic about any characteristic. Be content to get a general idea yourself, to learn what to expect, so that you can measure the behavior of any individual child against this and see where and how he can be helped in this respect. This is the real point of your study, and records are but a means to that end.

Throughout this chapter, we have used seven-year-old Johnnie as the Johnnie Q. Public of childhood, to illustrate the general principles of ways and means of studying children. It is obvious that a child of another name, another age, or another country would do just as well. And it is equally obvious that to gain a true picture of childhood from baby to adulthood, one should study children of as many different ages as possible. Each age is a transition age between the one out of which the child has grown and the one into which he is soon to grow. The whole span of growth from seed to saplings is important, and each age makes its contribution to an understanding of children of any age.

REFERENCES

LIST I

BAILEY, EDNA W., ANITA D. LATON, and ELIZABETH L. BISHOP: *Outline for Study of Children in Schools*, McGraw-Hill Book Company, Inc., 1933.
Chapter II. Basis for Description and Appraisement of Children by Parents and Teachers. pp. 4–5.
Chapter III. Using Everyday Material in the Study of Children. pp. 6–25.
Appendix A. pp. 197–220.

BAIN, WINIFRED E.: *Parents Look at Modern Education*, D. Appleton-Century Company, Inc., 1935.
Chapter X. Tests, Records, and Reports. pp. 216–246.

LIST II

ANDRUS, RUTH, and associates: *Curriculum Guides for Teachers of Children from Two to Six Years of Age*, John Day Company, Inc., in association with Reynal & Hitchcock, 1936.
Part IV. Experiences of Two- to Six-year-old Children. pp. 40–252 (some examples of records).

BAKER, CLARA BELLE, director of the Children's School, and other members of the staff: *Curriculum Records of the Children's School*, Bureau of Publications, National College of Education, 1932.
Part V. Individual Records and Their Use. pp. 453–553.

APPENDIX III

STUDENT OBSERVATION OF BABIES

DETAILS of the plan of student observation of babies are given here as they were worked out at Vassar College. The year that the work was started considerable groundwork had to be done in the community; but after that, the machinery ran smoothly with just a little attention every once in a while.

The first step was to survey the field, to find out what organizations located near by were in touch with children under two years of age. Settlement houses, day nurseries, orphan asylums, and district nurses are some of the possibilities for locating a wide variety of ages and family backgrounds. Brothers and sisters of children in the elementary school form another good source of supply. Parks and playgrounds are another.

The next step was to obtain from all these sources the names, addresses, and birth dates of the babies. It is important to note birth date accurately, for this gives you a point of reference from which to figure chronological age at any future date. A filing card for each baby was found to be the most convenient way to keep the records. The file was easily kept up to date by adding cards for new babies and removing those for babies who had moved away or grown too old.

HOME VISITING

The third step was to visit the homes and obtain the mother's permission to observe the baby there or her willingness to bring him to class some day. The initial visits were made by a teacher, because of the prestige of her position and her greater experience in home visiting. But she usually took one or two students with her on each visit. This served a threefold purpose: The original contact with the mother was made; students had a chance to see how this was done; and community interest was aroused in the project.

The sight of Miss Reynolds accompanied by two students and their notebooks calling on Mrs. Jones or Mrs. Green or Mrs. Brown "just to look at Johnny" soon became familiar in the neighborhood; and each mother, instead of being reluctant to admit strangers, began to speculate on how soon the trio would come to her home. Any resistance in the community will undoubtedly be broken down after the first few visits if observers are considerate of mothers and children.

After a visit in which a student accompanied a teacher and in this way had an opportunity to study the technique of home visiting, each Vassar student was permitted to go by herself or with a friend to observe the baby in his home. It has been our experience that most parents are glad to show off their babies and that young mothers welcome the contact with students. Home observation is of inestimable value to students; and with proper leadership and fairly close guidance, no difficulties are encountered. Most young people see only the homes of their friends. They know little or nothing of how "other people" live; and it is impossible for them to appreciate the conditions under which children grow up in this country unless they have a chance to study them first hand. Do not confuse this home visiting to observe small babies with "slumming." Many of the homes to which our students had access for observation were of a high cultural and economic level. If the class is not too large, and schedules not too full, it seems most desirable to carry out a plan of home visiting for child study students.

Each student worked out for herself a program of observations from the card file of available babies. Some check on the work was necessary, so students noted on the cards the dates of their visits to the homes and any unusual happenings. In this way, the teacher could keep in touch with what was going on and could protect the mother from too many visits. Furthermore, the health of both students and children was safeguarded by following the policy of the college medical department with respect to colds. No student was permitted to go to a home when either she had a cold or there was a cold in the home. There is a certain health hazard in a home visiting program of any kind; but with cooperation on the part of students and parents, this may be reduced to a minimum.

CLASSROOM DEMONSTRATIONS

Classroom demonstrations are another means of familiarizing students with growth changes in babies in the first and second years of life, and it has been our experience that mothers like to bring their babies to class. No reward or payment is necessary other than consideration for both mother and child. In some cases, transportation was provided. In planning any program of classroom demonstrations, remember that babies are very unreliable. Colds, bad weather, and all sorts of unexpected things will make it impossible for mothers to bring their babies as scheduled. Both teachers and students should be prepared for difficulties in carrying out the program as arranged. A good way to assure having at least one baby in class for an observation is to schedule two to come on the same day. If both babies do come, as sometimes happens, there is a grand opportunity to show differences between children of different ages or between children of the same age. If one drops out, you still have a demonstration. An amphitheater type of classroom is the best kind for a demonstration. It enables students to see what is going on without apparently staring at mother and child, as seems to be the case when observers and observed are on the same eye level.

It is important that the time of the class meeting should be one that is convenient for the schedule of babies under two years of age. Between nine and eleven in the morning is a good time. It is obvious that a late afternoon or an evening class is quite useless for demonstration purposes.

The equipment used at the demonstrations depended on the age of the child; but in any case, it was never elaborate. A bright colored ring on a string, a rattle, or something that makes a noise is all that you need for the baby under a year. If the child is not walking, he can be placed on a desk or a table, after his mother has taken off his outside clothing. An older child can be allowed to stand on the floor and run about as he will. A small chair and table and a peg board furnish all the activity that you need.

The technique of the classroom demonstration varied with the subjects, mother as well as child. Consideration for the child and his mother determine the procedure. Our students were cautioned not to laugh or make noises that would frighten the child and were encouraged to confine any questions or comments to things acceptable to the mother. When observers try to put themselves in the place of the mother and think how they would feel if they were in her shoes, there is no difficulty.

In many ways, the demonstration of an older child differs from that of a newborn baby. It doesn't matter much what you do or say to the tiny baby—he seems so removed from the world and not the least bit embarrassed by our comments or attentions. Not so with the child of six months or a year. He takes an interest in all that goes on around him. He understands much that is said and decidedly resents any interference with his person. For these reasons, a demonstration of older babies must proceed more cautiously and with less direct methods than that of the newborn baby.

When students first begin to observe, they get lost and do not know how to select the significant things, and it is well to call their attention to certain behavior from time to time during the demonstration. When talking with the mother, it is a good idea to begin by showing interest in the child's physical condition, his weight at birth, the food he has, and any illnesses he may have had. Mothers are accustomed to taking their children to doctors or to clinics and feel more at ease when the information asked for follows familiar lines.

Throughout the demonstration, observers should be on the alert for indications of the baby's individual personality as well as the reactions characteristic of his age. Notice his smiles, any indications of fear, the extent of his dependence on his mother, and other significant reactions.

If the mother and child leave the room ten minutes or so before the class hour is over, the points brought out in the demonstration can be discussed freely while everything is fresh in the observers' minds.

Home observations and classroom demonstrations are most valuable means of acquainting students with the characteristics of babies of different ages and with the conditions under which babies are brought up in this country.

APPENDIX IV

SUGGESTIONS FOR INTERVIEWING

EVERYONE who is interested in children sooner or later faces the job of conferring with other people about them. In business and social work, this is referred to as "interviewing." There are many different ways of doing it, and child study students should give thought to the method of interviewing that is best suited to their purpose. A few suggestions that have proved helpful in the conferences between students, parents, and teachers in the child study work at Vassar College are given here.

Interviewing isn't the simple question and answer business that it used to be. It now involves much more than merely asking questions and writing down the answers. It means interpreting the significance of what you see, hear, and feel. Direct questions are of limited usefulness, first, because they seem impertinent and, second, because they fail to produce information about human relations. The really important things are the intangibles, like the attitude of the parents to each other; what a child's teacher thinks of him; and what he thinks of himself, for instance.

Information about these seldom comes in answer to direct questions; it has to be inferred from tone of voice, side glances, and a thousand and one other indications.

This, then, is your job, so to conduct your interview that the person you are interviewing will act and talk naturally and with little or no embarrassment give you indirectly the information that you need to understand Johnnie better.

The first step is to prepare for the interview by thinking over what information you want and the best ways of getting it. It may not be necessary to write out a formal plan for the conference, but by all means have the important points firmly in your mind. Wherever you can, find out in advance something about the person you are interviewing, what his position is, what his interests are, and how he likes to be treated. For a more or less formal interview, make an appointment, and be punctilious in keeping it.

During the interview, show interest in the person as a person, not merely as an accessory to Johnnie. Teachers, parents, and doctors are human. They respond to a genuine interest just as we all do. Keep your eyes open for indications of their hobbies, their special enthusiasms, and anything else that is a vital part of their personalities. Bring up these topics when the opportunity offers, and encourage them to talk about them. Even an austere person will warm up to someone who gives him a chance to talk about the subject nearest to his heart. And it goes without saying that after that he will be much more helpful.

Encourage him to talk; don't talk yourself. You will feel a great temptation to tell incidents, to mention things about Johnnie or yourself that seem interesting to you, but don't succumb to it. It only uses up time in which you might be getting valuable information from the person you are interviewing. An occasional comment of appreciation, a leading question, or an expression of interest will usually be sufficient to keep the conversational ball rolling.

And as the person talks, be alert to shades of meaning in what he says. These are often more important than the actual words. For instance, Miss Jones describes Johnnie as "a naughty little boy"; but the look in her eye and the tone of her voice tell quite plainly that she is really quite fond of him and admires him for his naughtiness. Mrs. Smith gives Mr. Smith a dagger look as she says, "Mr. Smith's mother is sick again, poor thing," and you recognize that here is a cause of family friction.

Actions usually speak louder than words. Emphatically, Johnnie's mother asserts that she never makes favorites among the children, but you notice that in her conversation she always talks about Jane. In an afternoon that you spend in her home, you note, too, that she gives all her attention to Jane and speaks to Johnnie only to reprimand him or send him away. This is not to say that Johnnie's mother is trying to deceive you. She is not conscious of what she is doing. The point is that her words mean little; her actions tell the real story.

Much of the information that comes indirectly will not be easy to interpret. It may take more than one interview to clear up certain points. Others will still be unsolved at the end of your study. Human behavior is too complicated ever to be thoroughly understood through interviews or any other techniques at our disposal at the present time.

It goes without saying that you should avoid touchy subjects, that you should shy away from things your informant is reluctant to talk about. Resist the temptation to pry a fact loose even if it does seem very important.

Don't run the chance of antagonizing the person you are interviewing. Once you do, the doors for any future interviews with this person will be closed to you. Resistance will be built up just as soon as you let the person you are interviewing feel ill at ease. After all, this is a friendly conference, with the welfare of a child in mind. You are after information, and you can get it more easily if the parent or teacher is not resistant to you.

Always close an interview on a friendly note; don't leave the person "glad that's over" and hoping "not to be bothered by her any more." Interested in Johnnie as you are, you never can tell when you will want to approach your informant again. It is wise to leave yourself a loophole based on a friendly relationship. One way to make yourself welcome is to suit your mood to that of the person you are interviewing. If he is hurried, get your business over with promptness and dispatch. If he is talkative and wants company, settle down to listen. Don't stay too long in either case. Leave before signs of boredom begin to show themselves. As a matter of fact, if you follow the suggestion given earlier to let the person talk about his own interests, there is little chance that he will be bored, but it is just as well to keep an eagle eye out for it anyway.

Should you take notes during an interview? As a rule, the answer is no; but there are exceptions. You really have to decide for yourself after you become familiar with the person you are interviewing. Don't attempt it unless you are sure that there will be no objection to it. Better to forget a few dates (they aren't so important anyway) than to upset the person with whom you are conferring. Social workers and doctors may appreciate the businesslike air of your poised pencil and notebook, but parents are likely to be awed by it. In this, as in everything else, suit your procedures to the personalities you are interviewing.

As you can see, there is no simple rule of thumb for interviewing, but the Golden Rule is helpful in cases where you aren't sure what to do. Think how you would feel if you were on the other end of the interview, and act accordingly. If you do this, you may occasionally fail to get the information you want at the moment you think you need it; but in the end, you will be repaid with more information than you would get if you tried to force the issue. It is wise to approach each interview not as a chance contact but as the basis for a long-time partnership of people who are interested in Johnnie.

APPENDIX V

SUGGESTED OUTLINE FOR CHILD STUDY COURSE

THE outline has been planned for a child study course of thirty weeks. It is divided into topics numbered one through thirty, each one corresponding roughly to a week's work. By omitting any or all of the even-numbered topics which are given in parentheses, the course may be followed in abbreviated form. Where more time is available, it may be amplified to fit the interests and needs of the group.

ORIENTATION

(Chapter 1, Appendix II, III)

1. Discussion of methods of studying children, observation facilities, record taking, and interviews.

(2) Practice in taking and interpreting records.

HEREDITY AND PRENATAL DEVELOPMENT

(Chapter 2)

3. Talk by biology teacher on heredity and prenatal development.

(4) Laboratory study of cells and embryonic development.

BABIES UNDER A YEAR

(Chapter 3, Appendix III)

5. Observation and discussion of the newborn baby.
(6) Observation and discussion of babies of different ages under a year.

BABIES FROM ONE TO TWO YEARS

(Chapter 3, Appendix III)

7. Observation and discussion of a year-old baby—talk by pediatrician.
(8) Observation and discussion of babies of different ages between one and two years.

TWO-, THREE-, AND FOUR-YEAR-OLDS

(Chapter 4)

9. Observation of age level characteristics—talks by nutritionist and parents.
(10) Study of special topics such as muscular and social development, language.
11. Visits to play groups and nursery schools—talks by nursery school teachers—emphasis on guidance and education.
(12) Study of special topics such as habit formation, play materials, intelligence tests.

FIVE-, SIX-, AND SEVEN-YEAR-OLDS

(Chapter 5)

13. Observation of age level characteristics—talks by teachers and parents.
(14) Short personality study of individual child (Appendix II).
15. Observation in kindergarten, first and second year groups—talk by school physician about health examinations and disease prevention.

(16) Study of special topics such as reading, creative arts, outdoor play.

EIGHT-YEAR-OLDS

(Chapter 6)

17. Observation—discussion of social adjustment and school achievement.

(18) Demonstration and discussion of intelligence test by school psychologist.

NINE-, TEN-, AND ELEVEN-YEAR-OLDS

(Chapter 7)

19. Play observations—talks by recreation leaders from public playgrounds, settlement houses, clubs, or camps.

(20) Study of children's schedules—coordinating home, school, and recreation programs.

21. Talk by psychiatrist on personality adjustment and behavior problems.

(22) Study of special topics such as arithmetic, school grading systems, movies.

TWELVE-, THIRTEEN-, AND FOURTEEN-YEAR-OLDS

(Chapter 8)

23. Observation and discussion of physical changes at adolescence and their effect on personality.

(24) Study of special topics such as endocrine glands (talk by gland specialist); food selection (talk by school dietician).

25. Talk by junior high school principal—observation and discussion of school curriculum.

(26) Study of special problems of adolescence such as delinquency (talk by social worker from court or children's institution); competitive sports (talk by physical education director).

FIFTEEN-, SIXTEEN-, AND SEVENTEEN-YEAR-OLDS

(Chapter 9)

27. Observation and discussion of relations with own age group, parents, and school authorities.

(28) Study of special problems such as vocational guidance and college preparation—talks by specialists in these fields.

REVIEW

(Chapter 10)

29. Summary of principles of growth and their application to the guidance and education of children.

(30) Interpretation of individual personalities in the light of the foregoing principles.

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